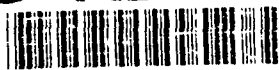


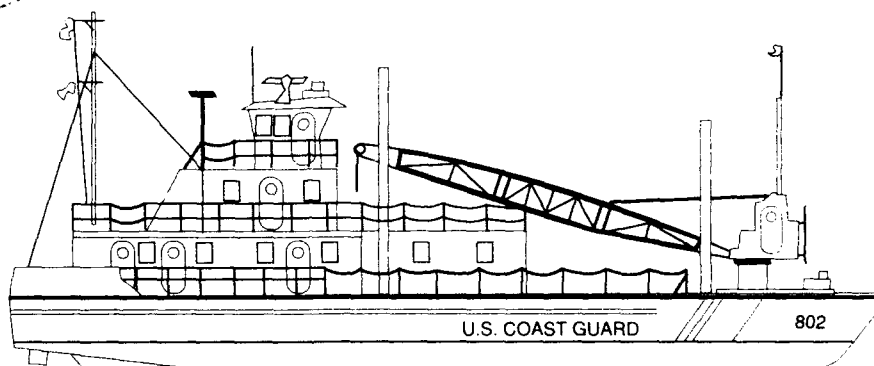
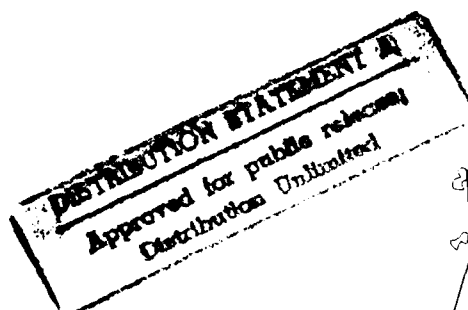
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Analysis of Required Fleet Size and Private Sector Cost Comparisons for the USCG Inland Construction Tender Fleet

Final Report



Research and Special Programs Administration
U.S. Department of Transportation
John A. Volpe National Transportation Systems Center
Cambridge, MA 02142-1093

May, 1994

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94-24389

U.S. Department
of Transportation

United States
Coast Guard



Office of Navigation Safety and Waterway Services
Washington, DC 20593-0001

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**ANALYSIS OF
REQUIRED FLEET SIZE AND
PRIVATE SECTOR COST COMPARISONS
FOR THE
USCG INLAND CONSTRUCTION TENDER FLEET**

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REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE May, 1994		3. REPORT TYPE AND DATES COVERED Final Report September 1993 - May 1994	
4. TITLE AND SUBTITLE Analysis of Required Fleet Size and Private Sector Cost Comparisons for the USCG Inland Construction Tender Fleet				5. FUNDING NUMBERS CG-494/B-4005	
6. AUTHOR(S) Kip Brown, Mark Bucciarelli, Flavio Leo					
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) U.S. Department of Transportation Research and Special Programs Administration John A. Volpe National Transportation Systems Center Service Assessment Division Cambridge, MA 02142-1093				8. PERFORMING ORGANIZATION REPORT NUMBER DOT-VNTSC-CG-94-4	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) LCDR Mitch West USCG Office of Navigation Safety and Waterway Services Short Range Aids to Navigation Division 2100 2nd Street, SW Washington, DC 20593-0001				10. SPONSORING/MONITORING AGENCY REPORT NUMBER DOT-CG-N-01-94	
11. SUPPLEMENTARY NOTES					
12a. DISTRIBUTION/AVAILABILITY STATEMENT This document is available to the public through the National Technical Information Service, Springfield, VA 22161				12b. DISTRIBUTION CODE	
<p>13. ABSTRACT (Maximum 200 words)</p> <p>This report documents an analysis performed in support of the United States Coast Guard in managing its fleet of construction tenders (WLICs). Three areas were examined: a determination of the optimum number of WLICs needed for the construction component of current WLIC work; a comparison of Coast Guard construction tender costs with representative private sector costs; and an assessment of the mission-related factors concerning WLICs that need to be considered before reducing the construction tender fleet or contracting for the construction of fixed aids to navigation.</p> <p>The analysis concludes that 11 WLICs are required for construction purposes; private sector costs exceed those of Coast Guard construction tenders fully employed on construction activities; and mission-related factors -- including having the capability of shifting tenders in response to peaks in construction activity and vessel maintenance requirements -- need to be included in any decision to alter the size and locations of the construction tender fleet.</p>					
14. SUBJECT TERMS Aids to Navigation, Construction Tender, Buoy Tender, Decision Support System				15. NUMBER OF PAGES 190	
				16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT		

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LIST OF ACRONYMS

AFC	allotment fund control
ANT	aids to navigation team
AOPS	abstract of operations
ATON	aids to navigation
ATONIS	aids to navigation information system
BU	buoy boat
BUSL	buoy boat - stern loading
CDB	corporate data base
CO	commanding officer
CPI	consumer price index
D1	USCG First District (Boston, MA)
D2	USCG Second District (St. Louis, MO)
D5	USCG Fifth District (Portsmouth, VA)
D7	USCG Seventh District (Miami, FL)
D8	USCG Eighth District (New Orleans, LA)
D9	USCG Ninth District (Cleveland, OH)
D11	USCG Eleventh District (Long Beach, CA)
D13	USCG Thirteenth District (Seattle, WA)
D14	USCG Fourteenth District (Honolulu, HI)
D17	USCG Seventeenth District (Juneau, AK)
DBN	daybeacon
DGPS	differential global positioning system
DOT	Department of Transportation
DSS	decision support system
ELT	enforcement of laws and treaties
FY	fiscal year
G-N	USCG Office of Navigation Safety & Waterway Services
G-NSR	USCG Short Range Aids to Navigation Division
GIS	geographical information system
LB	lighted buoy
LT	fixed light
NOAA	National Oceanic and Atmospheric Administration
O&M	operating and maintenance
OAN	USCG District Operations Division, Aids to Navigation and Waterways Management Branch
RSPA	Research and Special Programs Administration
SFM	service force mix
SRA	short range aids
TED	turtle exclusion devices
ULB	unlighted buoy
USCG	United States Coast Guard

USCGC	USCG cutter
VNTSC	Volpe National Transportation Systems Center
VOSS	vessel oil skimming systems
WLB	seagoing buoy tender
WLI	inland buoy tender
WLIC	inland construction buoy tender
WLM	coastal buoy tender
WLMR	coastal buoy tender replacement vessel
WLR	river buoy tender

EXECUTIVE SUMMARY

This report documents an analysis performed in support of the United States Coast Guard in managing its fleet of construction tenders (WLICs). The project was sponsored by the Coast Guard's Office of Navigation Safety and Waterway Services, Short Range Aids to Navigation Division (G-NSR). Three areas were examined: a determination of the optimum number of WLICs needed for the construction component of current WLIC work; a comparison of Coast Guard construction tender costs with representative private sector costs; and an assessment of the mission-related factors concerning WLICs that should be considered before reducing the construction tender fleet or contracting for the construction of fixed aids to navigation.

Background

The Coast Guard operates a fleet of 16 WLICs whose purpose is to build, or rebuild if destroyed, fixed aids to navigation (ATON). Three of the tenders are home ported in the Fifth Coast Guard District (Portsmouth, VA), five are located in the Seventh District (Miami, FL), and eight are located in the Eighth District (New Orleans, LA). The most common types of fixed structures built by WLICs are daybeacons, lights, and ranges. Over time, due to geographic availability and because construction work has not fully utilized their capacity, WLICs have been assigned responsibilities for servicing buoys.

The need to replace some of the older WLICs is approaching. However, the acquisition of new construction tenders can be deferred if, as older tenders are retired, the loss is offset by a reduction in the demand for construction tenders. The Coast Guard recognizes that such a reduction can be realized through off-loading the non-construction activities performed by WLICs onto less expensive resources. Specifically, the new replacement stern-loading buoy boats (BUSLs) being acquired by the Coast Guard can perform much of the buoy work done by WLICs, and their capital costs are less than one-seventh of the estimated cost of a new WLIC.

Previous work by the Volpe Center was directly applicable to the requirements of this analysis. A 1990 Volpe Center study initiated by the Office of Management and Budget to evaluate the commercial servicing of short range ATON performed by Coast Guard Aids to Navigation Teams concluded that no definitive advantage would be gained through a contracting effort. For a 1992 study in support of the Coast Guard's Service Force Mix (SFM) 2000 project, the Volpe Center designed, developed and exercised the ATON SFM Decision Support System (DSS) to project fleet size requirements for the Coast Guard's replacement fleet of seagoing and coastal buoy tenders. Finally, a 1993 Volpe Center study applied the ATON SFM DSS to project the required number of replacement BUSLs, mentioned previously. That analysis projected the need for 44 replacement BUSLs, 10 of which were targeted for the buoy work assigned to WLICs that BUSLs are capable of performing. The analysis concluded, however, that the final number of replacement BUSLs will depend on the projected WLIC fleet size produced by this analysis.

Projected WLIC Construction-Carry Fleet Size

A derived log file representing one year of construction activities for the 16 current WLICs was developed for this analysis. The file was based on an October, 1993 version of the Coast Guard's Aids to Navigation Information System (ATONIS) discrepancy file and a comparison of the 1990 and 1993 ATONIS aid files. The number of derived activities was 1,640, or approximately 103 per tender.

The derived file was converted for use with the ATON SFM DSS. Additional data required by the DSS, including vessel speeds, service times, lengths of cruises, lengths of work days, and prep/deprep times, were collected by G-NSR from each of the current tenders. The DSS was exercised for each current WLIC and the results were validated against reported piling usage data. DSS results showed opportunities for combining the work of some tenders, based on the use of an underway target of 1,500 hours (developed by this analysis).

The Fifth District (D5)

DSS results for D5 indicate that two WLICs -- one home ported at Baltimore and the other at Atlantic Beach, NC -- are capable of performing the construction work of the District's three current construction tenders. A large disparity was apparent, however, between the derived log file and the reported underway hours in the Coast Guard's Abstract of Operations for the three D5 construction tenders. Based on discussions with D5 personnel, the difference was attributed to structure upgrades performed by D5 which could not be captured in the derived file. If significant levels of additional structure upgrades are planned in the Fifth District, two construction tenders may not be adequate for the district's requirements. However, the ability to justify the need for a third construction tender based on structure upgrade requirements is not apparent. Upgrades can be planned out in advance and could be amenable to being performed through commercial contracts.

The Seventh District (D7)

DSS results for D7 indicate that four WLICs are capable of performing the construction work of the District's five current construction tenders. The current home port projected for elimination is Brunswick, GA.

The Eighth District (D8)

DSS outputs, combined with the WLIC qualitative mission factors identified in this analysis, result in a projection of five WLICs for the Eighth District.

DSS results for D8 indicate that one construction tender assigned to each of the district's four groups -- each of which currently have two -- would be capable of accomplishing the district's fixed aid construction requirements with minimal crossing of group boundaries. However, a fleet of four WLICs would have no capacity within the 1,500 hours underway target for above-average years of activities and consequently would be severely strained during periods of tender maintenance or significant surge response situations. These conditions are especially

relevant for D8, where 83% of WLIC construction activities were in response to discrepancies which generally can not be rescheduled around maintenance and surge response requirements. Accordingly, this analysis concludes that five WLICs are required in D8. The area around Morgan City, LA, would be a central location for the fifth tender, but placement of the fifth tender is subject to district concerns and local considerations.

Impact on Projected Replacement BUSL Requirements

The Volpe Center's August, 1993 analysis of Coast Guard BUSL requirements projected the need for 10 replacement BUSLs to perform the buoy work currently performed by WLICs.

Based on the results of this study, reducing the WLIC fleet size by five -- to a fleet of 11 -- would still leave some capacity for some WLICs to perform buoy work. Having re-examined the BUSL requirements, the BUSLs previously projected for Charleston, Miami, and Galveston are no longer required, resulting in a revised projection of seven BUSLs for WLIC buoy work.

Comparison of WLIC and Private Sector Costs

The cost analysis of WLICs was initiated from the Coast Guard's own interest in exploring the relative costs of the WLIC fleet. No trial contracts have been developed or are planned. Therefore, private sector cost data directly related to the areas of operation of the 16 current WLICs was not available. Instead, current Coast Guard contracts for marine construction in Districts 11 (California) and 13 (Oregon and Washington) served as the source of comparable private sector costs. Therefore, differences in cost of living and in geographic marine construction costs, and possible economies of scale, are not reflected in this analysis.

Coast Guard costs were developed based on an estimation of the proportion of construction tender ATON resources expended on fixed aid construction activities versus non-construction activities. The use of an estimate was necessary because the Coast Guard does not track construction tender costs by mission area.

The results of the economic analysis indicate that private sector contract costs exceed those of Coast Guard construction tenders that are fully employed on construction activities. Of the total average annual WLIC operating cost of \$771,820, 56% is consumed on personnel, 27% on engineering, and only 17% on operations and maintenance. The relatively fixed personnel and engineering costs result in lower average unit costs as a tender's workload increases.

Accordingly, an under utilized Coast Guard construction tender compares significantly less favorably against private sector costs than a tender that is fully utilized when capital replacement costs are included. This finding is consistent with the Coast Guard's use of contracted construction resources in those districts where the level of construction activity does not warrant the assignment of WLICs.

WLIC Qualitative Mission Factors

A reduction in the Coast Guard's construction tender fleet will reduce the availability of WLICs for performing activities beyond their ATON construction mission. The effects would be most noticeable in the following areas:

- meeting surge response requirements;
- providing ATON support to other Coast Guard districts;
- covering for other tenders undergoing scheduled and unscheduled maintenance;
- providing non-ATON support to other Coast Guard missions; and
- providing non-ATON marine construction support to other Coast Guard and government organizations.

To the extent that these activities are no longer performed by Coast Guard assets, the Coast Guard's visibility and associated public perception may be affected.

If private sector fixed aid construction costs were to compare favorably with Coast Guard construction tender costs, the following considerations should be included in the decision of whether to pursue the contracting option.

- Shifting contracted resources in response to surge response and maintenance requirements may be more difficult than it is with Coast Guard resources.
- The Coast Guard districts to which WLICs are periodically loaned would have to acquire alternative resources.
- Alternatives would have to be found for performing the WLICs' buoy work, for building docks and bulkheads for other Coast Guard and government organizations, and for the support to other Coast Guard missions currently delivered by WLICs.
- The Coast Guard's pipeline for developing personnel skilled in construction tender activities would no longer exist and therefore could not produce the expertise required to assure the quality of contracted fixed aid construction operations.
- Contractual specifications may inhibit the performance of discretionary preventive maintenance.
- Any delays encountered by contractors in receiving government payments may work counter to the requirements of an effective aids to navigation system.

Conclusion

A fleet of 11 construction tenders would be sufficient to meet current fixed aid construction requirements. This represents a reduction of five tenders from the current fleet of 16.

This would be achieved primarily through the transfer of approximately 1,400 of the 1,600 buoys worked by WLICs to seven replacement stern-loading buoy boats. In addition, other WLIC mission areas, including ATON support to other districts, non-ATON support to other Coast Guard missions, and construction of docks and bulkheads for both the Coast Guard and other government agencies, would have to be curtailed.

Construction tenders fully employed doing construction work result in economies of scale due to the fixed personnel and engineering costs of vessel operations. These economies of scale result in no apparent monetary advantage to contracting the work of construction tenders.

Recommendation

As the new BUSLs are brought into service and the oldest WLICs are retired, the Coast Guard should begin a realignment of construction tender operating areas down to a configuration of 11 WLICs. Then, the Coast Guard should acquire new WLICs to replace the remaining tenders.

The absence of complete and available data on the activities of the Coast Guard's construction tenders encountered by this analysis indicates that the Coast Guard needs to uniformly record and collect data capturing the activities of its ATON resources. Maintaining accurate, complete, and uniform data on construction activities and on all other ATON servicing activities would provide the Coast Guard with benefits beyond the requirements of this analysis. As federal agencies are faced with greater demands on limited resources, measuring and ensuring effectiveness becomes increasingly more important.

Better data will also provide a more accurate basis from which to consider contracting options. Contracting options should be investigated only for situations where required construction levels are not enough to keep a construction tender fully employed on construction activities. This includes areas where less than one WLIC is required, and where some number plus a fraction is warranted. Contracting an amount of work equal to the fractional portion would offer cost advantages over partially using Coast Guard assets. Private sector unit costs compare favorably with those of under utilized construction tenders.

1 PURPOSE

The Volpe Center was tasked by the U.S.C.G. Office of Navigation Safety and Waterway Services, Short Range Aids to Navigation Division (G-NSR) to conduct a fleet sizing and economic analysis study of the inland construction tender fleet (WLICs) in support of G-NSR's Short Range Aids to Navigation Mission Analysis (SRAMA). The objectives of the analysis are the following:

1. To project the required WLIC fleet size needed to perform only the construction component of current WLIC work. The results will be used by the Coast Guard in planning for the decommissioning of the oldest tenders in the WLIC fleet.
2. To compare Coast Guard construction tender costs with representative private sector marine construction costs. The results will be incorporated into future acquisition plans for replacing WLICs.
3. To perform a qualitative analysis of the mission of WLICs. This objective is intended to identify those factors that are related to the mission of WLICs but which are not directly relevant to the first two objectives. The factors will address issues that need to be considered by the Coast Guard before any decision is made to reduce the construction tender fleet or to contract for the construction of fixed aids to navigation.

2 BACKGROUND

The Coast Guard operates a fleet of 16 WLICs whose purpose is to build, or rebuild if destroyed, fixed aids to navigation (ATON). Three of the tenders are home ported in the Fifth Coast Guard District (Portsmouth, VA), five are located in the Seventh District (Miami, FL), and 8 are located in the Eighth District (New Orleans, LA). Table 1 and Figures 1 through 3 show the WLIC locations for each district.

The most common types of fixed structures built by WLICs are daybeacons, lights, and ranges. Over time, due to geographic availability and because construction work has not fully utilized their capacity, WLICs have been assigned responsibilities for servicing buoys. The need to replace some of the older WLICs is approaching and the opportunity exists to off-load their buoy work onto the relatively less expensive stern-loading buoy boats (BUSL) currently being acquired by the Coast Guard.¹

¹ Capital costs for a replacement BUSL are approximately \$1 million, whereas the initial G-NSR estimate for a replacement WLIC is \$7.7 million. Therefore, viewing capital costs only, up to 7 BUSLs would be cost effective if they resulted in one less WLIC.

TABLE 1. WLIC FLEET HOME PORTS

DISTRICT	HOME PORT	WLIC	CLASS
5	Baltimore, MD	SLEDGE	75-foot
	Portsmouth, VA	KENNEBEC	160-foot
	Atlantic Beach, NC	PRIMROSE	100-foot
7	Charleston, SC	RAMBLER	100-foot
	Brunswick, GA	S LAX	100-foot
	Mayport, FL	HAMMER	75-foot
	Miami Beach, FL	HUDSON	160-foot
	St. Petersburg, FL	WISE	75-foot
8	Mobile, AL	AXE	75-foot
	Mobile, AL	SAGINAW	160-foot
	New Orleans, LA	WEDGE	75-foot
	New Orleans, LA	PAMLICO	160-foot
	Galveston, TX	CLAMP	75-foot
	Galveston, TX	HATCHET	75-foot
	Corpus Christi, TX	ANVIL	75-foot
	Corpus Christi, TX	MALLET	75-foot

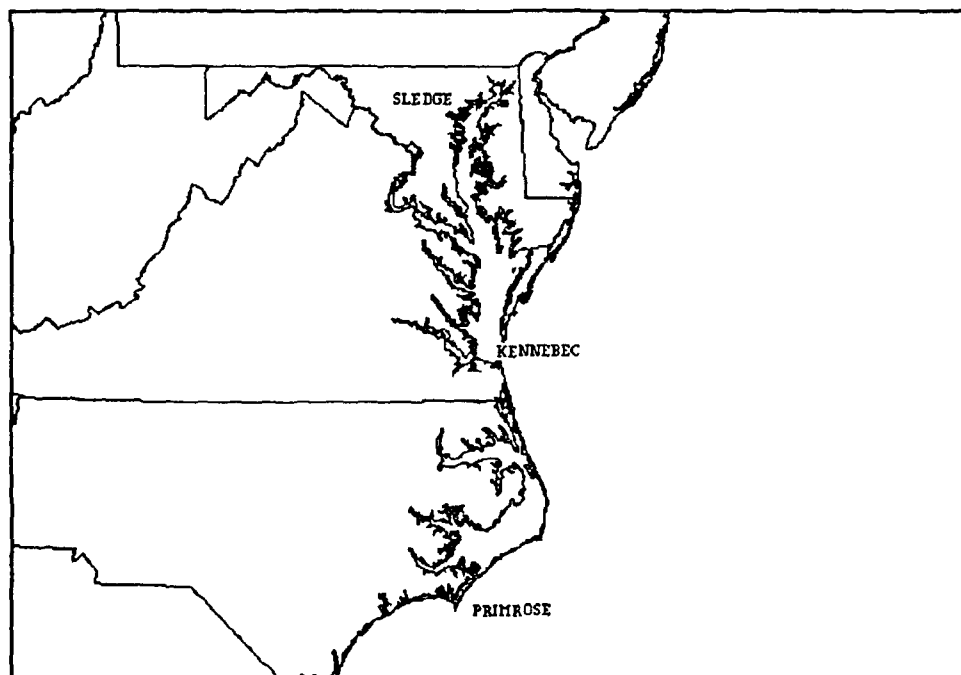


FIGURE 1. DISTRICT 5 WLICS (3)

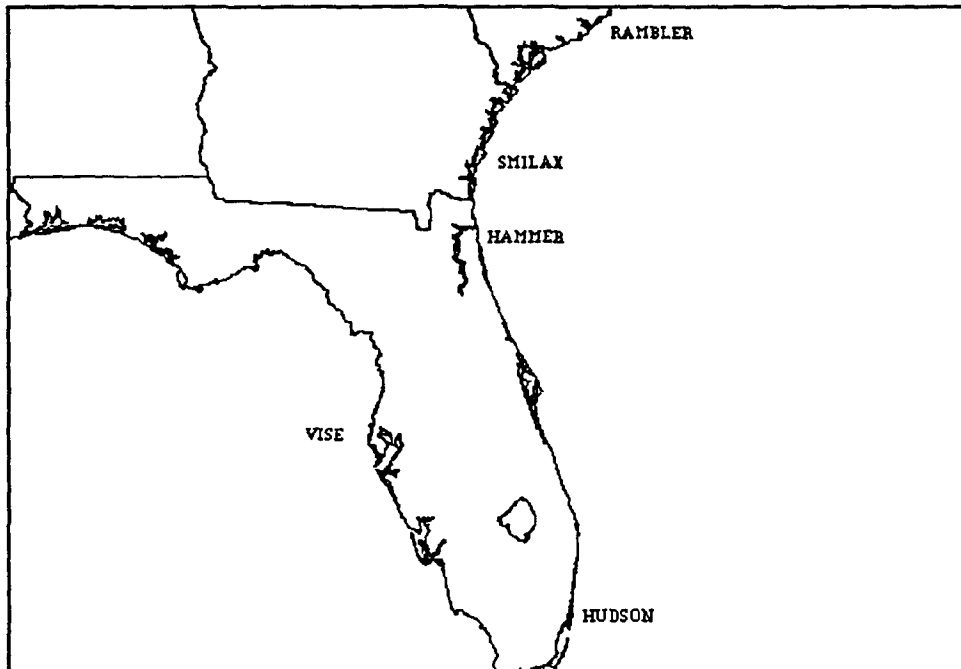


FIGURE 2. DISTRICT 7 WLICS (5)

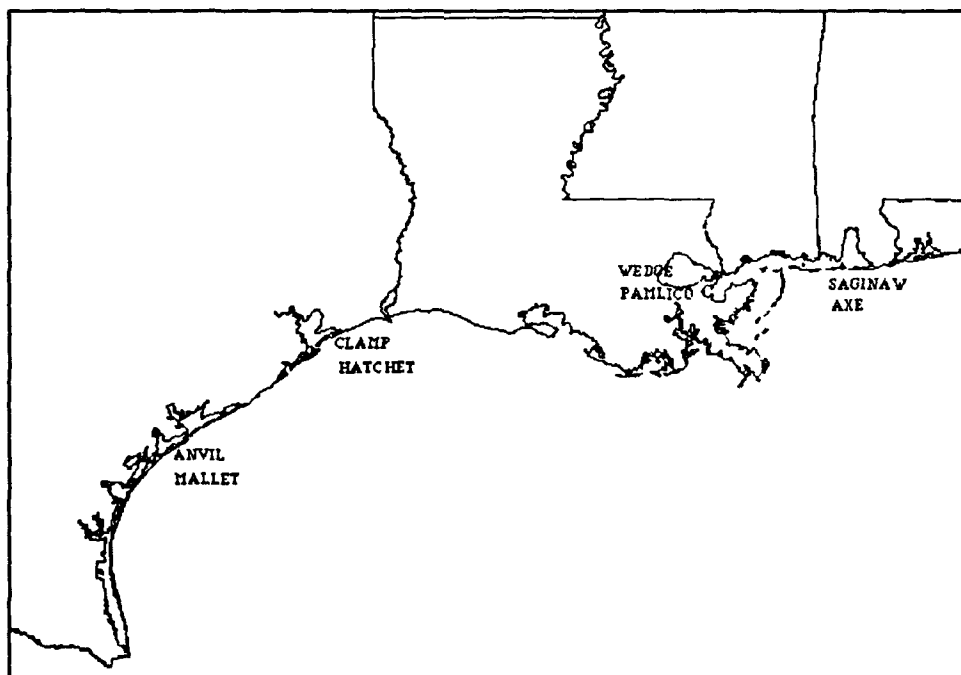


FIGURE 3. DISTRICT 8 WLICS (8)

Past Volpe Center support to the Coast Guard provides a basis for analyzing relative costs and fleet size requirements of WLICs. In 1990, the Office of Management and Budget requested that the Department of Transportation conduct an objective and independent evaluation of the results of three trial contracts awarded by the Coast Guard for commercial servicing of short range aids to navigation. The Volpe Center was tasked to perform the evaluation by the Coast Guard, the Office of the Assistant Secretary for Administration, and the Office of the Assistant Secretary for Budget and Programs. The Volpe Center's evaluation "did not produce any definitive position on whether the servicing of aids to navigation assigned to ANTs [Coast Guard Aids to Navigation Teams] should be contracted. All trial contractors performed satisfactorily. The differences between the contractors' costs and estimated USCG costs were not consistent enough to generalize to future cases for contracting ANTs."²

In support of the Coast Guard's Service Force Mix (SFM) 2000 Project, the Volpe Center designed, developed and exercised the ATON SFM Decision Support System (DSS) to project fleet size requirements for the replacement fleet of seagoing and coastal buoy tenders being acquired by the Coast Guard. The analysis projected the need for 16 seagoing tenders and 14 coastal tenders, representing a reduction of seven tenders from the current fleet size.³

In 1993, the Volpe Center analyzed requirements for the replacement BUSLs being acquired by the Coast Guard. The analysis, conducted as part of SRAMA, considered the use of the replacement buoy boats in three areas: to replace the Coast Guard's current fleet of thirteen 46-foot BUSLs and twelve 45-foot buoy boats; to assume some or all of the buoy work being performed by WLICs and inland buoy tenders (WLIs); and to identify and offset possible shortages in ATON response capabilities resulting from the decreased fleet size of seagoing and coastal buoy tenders projected by SFM 2000. The analysis projected the need for 44 replacement BUSLs, 10 of which were targeted for the WLIC buoys that BUSLs are capable of working.⁴ The analysis concluded, however, that the final number of replacement BUSLs will depend on the projected WLIC fleet size produced by this analysis.

² Volpe National Transportation Systems Center, U.S. Department of Transportation, *Evaluation of Contracting the Servicing of Short Range Aids to Navigation*, RSPA-TSC-CG094-TM-1, August, 1990.

³ Volpe National Transportation Systems Center, U.S. Department of Transportation, *Aids to Navigation Service Force Mix 2000 Project, Volume 1: Development and Application of an Aids to Navigation Service Force Mix Decision Support System, Final Report*. DOT-VNTSC-CG-92-2.1, June 1992.

⁴ Volpe National Transportation Systems Center, U.S. Department of Transportation, *Analysis of USCG Replacement Stern-Loading Buoy Boat Requirements for the Aids to Navigation Mission, Final Report*. DOT-VNTSC-CG-93-1, August, 1993.

3 PROJECTED WLIC CONSTRUCTION-ONLY FLEET SIZE

3.1 Data Limitations

The ATON SFM DSS utilizes geographic information system (GIS) technology to model the work activities of ATON servicing platforms. For SFM 2000, one-year profiles of aid servicing requirements were developed based on the service dates corresponding to aid inspections, mooring inspections, recharges, and reliefs contained in the Coast Guard's Aids to Navigation Information System (ATONIS). Aid discrepancies were derived from the ATONIS Discrepancy file and were supported or modified from surveys and discussions with tender and district personnel. A similar approach was also used for the 1993 analysis of replacement buoy boat fleet size requirements.

Unlike the activities of the coastal tenders, seagoing tenders, and buoy boats modeled in the previous Volpe Center studies, the construction work of WLICs does not follow regular annual servicing patterns and available data sources do not fully capture the historical construction work of the WLIC fleet. For instance, there are no structure "built" or "re-built" dates in the ATONIS Aid file, and the ATONIS Discrepancy file does not appear to be consistently and fully populated for all districts and tenders.

Key inputs required for a WLIC fleet-sizing analysis that were not available from the ATONIS files include the following: structure establishment dates; structure removal dates; conversions of aids from floating to fixed (in effect, establishments); and conversions from fixed to floating (in effect, removals). In addition, ATONIS provides no indication of the preventive maintenance performed by some tenders whereby aging structures are rebuilt in order to prevent future discrepancies.

Due to the limitations of the available data, the validity of the fleet-wide construction log file derived from existing data for this analysis is considered to be less accurate than the data used in past studies for the seagoing and coastal tenders and for BUSLs. To gage the validity of the derived log file, reported piling usage data was used as an indicator.

3.2 The Derived Log File

Vessel activity files, in list form, were provided by three WLICs: HUDSON (Miami - D7); SAGINAW (Mobile - D8); and MALLET (Corpus Christi - D8). The tenders used their actual ship logs to compile the lists. However, recognizing the extensive amount of time and effort required of the tenders to sort through their ship logs and compile two to three years of activities, and the impracticality of loaning out or copying actual ship logs, this analysis derived construction log files for all 16 WLICs from available data. The three vessel activity files that were received were used to evaluate the accuracy of the derived log files and as the basis for developing the construction-related operating costs of WLICs.

3.2.1 Discrepancies

The ATONIS Discrepancy file as of October, 1993 served as the basis for discrepancy inputs. The table covered 34 months of discrepancy data (beginning in January, 1991). Discrepancy records were considered to require a response by a WLIC if the following conditions were met:

- the associated aid type in the ATONIS Aid file was a light (LT) or daybeacon (DBN)
- the "Discrepancy Corrected" field (DISCCORR) was determined to be one of the following:

DISCONTINUED
REBUILT/RECOVERED
REBUILT/REMAINS
RESET ON STATION

- the responding unit had been either a WLIC or had been left blank

Based on the available 34 months, a 12-month average was computed. Calendar year 1992 was then used as the base year. For WLICs where 1992 discrepancies exceeded the one-year averages, randomly selected 1992 discrepancies were dropped to get down to the average. Where 1992 discrepancies fell short of the averages, discrepancies from either 1991 or 1993 were randomly added by changing their calendar year. Table 2 shows the resulting distribution of discrepancies (along with establishments, removals, and conversions).

3.2.2 Establishments, Removals, and Conversions

A comparison of the ATONIS Aid files from October 1990 and October 1993 was the basis for determining structure establishments, removals, and conversions. Establishments were determined to be structures existing in the 1993 file but not in the 1990 file. Conversely, removal/discontinuations were determined to be structures existing in the 1990 file but not in the 1993 file. Conversions were identified by changes in the aid type field between 1990 and 1993, either to or from the structure designations of LT or DBN. Conversions within a structure aid type, such as an upgrade of a single-pile light to a multi-pile light, could not be identified from the available data.

One-year average totals of activities were computed, which corresponded to one-third of the total activity covered by the 36-month time frame between the two files. As with discrepancies, calendar year 1992 was used as the base year and 1992 activity quantities equal to the one-year averages were developed. Where 1992 service dates were still apparent on the 1993 aid file, those 1992 dates were used as the dates for establishments or conversions. Otherwise, the oldest service date attached to each 1993 aid file record was used as the relevant service date, except for removal/discontinuations, where the latest recorded service date on the 1990 file was used as the relevant service date. Where the resulting derived 1992 activities exceeded the one-year averages, selected 1992 activities were randomly dropped to get down to the average. Where 1992 activities fell short of the averages (as all removals did because they were based on dates from the 1990 file), service dates for a number of aids equal to the shortfall

were randomly converted to 1992.

Table 2 contains the resulting distribution of establishments, removals, and conversions.

TABLE 2. DERIVED 1992 CONSTRUCTION LOG FILE ACTIVITIES

WLIC	DBNs to LTs	LTs to DBNs	Re- mov- als	Estab- lish- ments	Pass. Light Only	Re- build/ Recov	Re- build/ Remain	Reset on Sta.	Total
KENNEBEC	3	0	6	45	0	20	4	0	78
PRIMROSE	5	0	10	30	0	97	7	4	153
SLEDGE	1	4	11	27	3	4	1	1	52
D5 Total:	9	4	27	102	3	121	12	5	283
HAMMER	0	0	1	7	0	38	15	1	62
HUDSON	2	1	10	14	1	51	29	1	109
RAMBLER	1	0	6	8	0	15	23	2	55
SMILAX	0	1	0	11	0	17	21	1	51
VISIT	3	0	15	23	1	60	38	0	140
D7 Total:	6	2	32	63	2	181	126	5	417
ANVIL	1	0	2	12	3	31	29	0	78
AXE	0	1	1	4	2	37	45	1	91
CLAMP	0	1	16	7	2	58	78	2	164
HATCHET	0	0	8	2	5	34	38	1	88
MALLET	1	2	2	9	1	35	26	0	76
PAMLICO	0	0	17	13	8	38	40	1	117
SAGINAW	1	0	3	6	11	66	107	0	194
WEDGE	1	0	26	1	15	53	35	1	132
D8 Total:	4	4	75	54	47	352	398	6	940
Totals:	19	10	134	219	52	654	536	16	1640
Activity Columns:									
DBNs to LTs:		Daybeacons converted to Lights							
LTs to DBNs:		Lights converted to Daybeacons							
Removals:		Removals(& DISCONTINUED & conversions to buoys)							
Establishments:		Establishments (& buoys converted to structures)							
Pass. Light Only:		Discrepancy: Passing Light Only (of LTs and DBNs)							
Rebuild/Recov:		Discrepancy: Rebuild/ Wreckage Recovered							
Rebuild/Remain:		Discrepancy: Rebuild/ Wreckage Remains							
Reset on Sta.:		Discrepancy: Reset on Station							

3.3 Other DSS Inputs

G-NSR, with assistance from the Volpe Center, distributed a WLIC Operations Questionnaire to collect operating characteristics such as vessel speeds and service times. Appendix A shows the questionnaire form. In addition, a prior data call to the WLICs had generated buoy deck space, cruise lengths, prep/deprep times, and lengths of work days.

Manual assignments of questionnaire service times to log file activity records were made based on the indicated log file work activities and the associated ATONIS aid types. Averages

of available questionnaire times were used for structures whose composition (wood, steel, or concrete) and/or number of piles could not be determined. Appendix B contains the WLIC service times.

Abstract of Operations data was used to develop average total underway and high-readiness hours covering Fiscal Years 1991 through 1993 for comparison with DSS results.

3.4 DSS Results for Current WLIC Fleet

Appendix C describes the one-page summary report generated by the DSS. Appendix D contains the actual one-page reports corresponding to each of the 16 WLICs performing the activities of the derived construction log file. Table 3 summarizes those results.

3.5 Analysis of Piling Usage Data

The "Reported Pilings" and "Derived Pilings" columns of Table 3 correspond to the annual amounts of pilings reported for each tender (in D5) or group (in D7 and D8), and the amounts of pilings associated with the visits in the derived log files, respectively. Table 4 shows the piling data received from the three districts that served as the basis for the "Reported Pilings" column of Table 3. For groups having two WLICs, reported pilings for each tender were set to half of the group's total.

As shown in Table 3, District 5's reported pilings exceed derived pilings by 57%. The District indicated that it has converted a number of single pile structures into multi-pile structures. Because no differences between the 1990 and 1993 ATONIS aid files would be visible for the upgraded structures, the upgrades could not be captured in the derived log file. The upgrades also help explain KENNEBEC's relatively low hours in the derived log file. The derived log shows only 76 structure construction visits for KENNEBEC, requiring only 446 hours. The average reported underway hours for KENNEBEC, however, was 1,703. Because KENNEBEC is not a primary servicing unit for buoys or structures, all of its hours should be attributable to WLIC construction activities.

In D7 the reported piling count was only 3% more than the derived count, and in D8, the reported count was 5% less than the derived count. The relative closeness of Districts 7 and 8 piling totals implies that the derived log file reasonably represents the actual overall work activities in those districts.

TABLE 3. DERIVED 1992 CONSTRUCTION LOG FILE DSS RESULTS

WLIC	Structure Visits	Avg. Visits /Trip	Avg. Days /Trip	DSS Hours	AOPS Undrwy Hours	DSS/ AOPS Hours	Reported Pilings (Table 4)	Derived Pilings	Reported/ Derived Pilings
KENNEBEC	76	2.9	1.5	446	1703	26%	170	84	202%
PRIMROSE	137	3.7	2.0	979	1335	73%	240	165	145%
SLEDGE	49	2.6	2.2	544	1019	53%	70	57	123%
District	5	Totals:		1969	4057	49%	480	306	157%
HAMMER	61	2.2	1.9	710	819	87%	72	95	76%
SMILAX	52	3.1	1.6	302	2379	13%	72	68	106%
Group Mayport		Totals:		1012	3198	32%	145	163	89%
RAMBLER	54	2.1	1.7	459	1200	38%	115	78	147%
HUDSON	108	3.3	2.2	1092	1763	62%	169	135	125%
WISE	140	3.6	1.9	937	1107	85%	136	172	79%
District	7	Totals:		3501	7269	48%	564	548	103%
ANVIL	72	3.0	1.8	576	773	74%	96	79	122%
MALLET	62	2.2	1.8	611	1146	53%	96	81	119%
Group Corpus Christi		Totals:		1187	1919	62%	192	160	121%
CLAMP	146	3.7	1.6	805	981	82%	115	185	62%
HATCHET	74	2.7	1.7	713	1132	63%	115	90	128%
Group Galveston		Totals:		1519	2113	72%	231	275	84%
AXE	80	4.0	2.9	913	824	111%	165	101	164%
SAGINAW	175	5.5	2.2	902	1546	58%	165	216	77%
Group Mobile		Totals:		1815	2370	77%	331	317	104%
PAMLICO	107	4.1	2.1	866	1773	49%	106	133	80%
WEDGE	91	2.5	1.8	719	927	78%	106	131	81%
Group New Orleans		Totals:		1584	2700	59%	212	264	80%
District	8	Totals:		6104	9103	67%	965	1016	95%
Fleet		Totals:		11573	20429	57%	2009	1870	107%

TABLE 4. REPORTED PILING DATA

TENDER or Group	FY92	FY93	Total	Average
SLEDGE	70		70	70
KENNEBEC	170		170	170
PRIMROSE	240		240	240
Other D5	27	238	265	132.5
D5 Totals				612.5
Group Charleston	93	136	229	114.5
Group Mayport	89	200	289	144.5
Group Miami	128	209	337	168.5
Group St. Petersburg	5	267	272	136
GantSEC	18		18	18
D7 Totals				581.5
Group Mobile	383	278	661	330.5
Group New Orleans			424	212
Group Galveston	197	264	461	230.5
Group Corpus Christi		193	193	193
D8 Totals				966

3.6 Determination of WLIC Underway Hours Target

A key input to any fleet sizing analysis is the work capacity of the vessels involved. Historical data provides an indication of capacity but does not necessarily represent a preferred measure of operations. As shown in Table 3, average WLIC underway hours for Fiscal Years 1990 through 1992 ranged from a low of 773 (ANVIL, Corpus Christi, TX) to a high of 2,379 (SMILAX, Brunswick, GA). The average for all 16 tenders was 1,277 hours. Limiting all vessels to the low figure would help to minimize crew and vessel fatigue, but would be inefficient and would require more than the current level of 16 tenders. Using the high figure would mean significantly less tenders would be required, but the vessels and crews would be more prone to fatigue and failure. The average may be a relatively better target, but it does not necessarily take into account vessel capabilities. Overall, the following factors deter the use of historic data:

- Past operations are based on assigned missions. Vessels assigned less work than they are capable of will show lower employment numbers.
- Differences in how operational data is recorded diminishes the data's utility. In the interests of safety, WLICs generally will not work at night and will instead tie up to a mooring or spud down (WLICs have "spuds" which are posts that can be lowered into the water and which effectively anchor and stabilize the tender so that it can perform construction operations). If moored in port, the associated time may be recorded as standby or high readiness hours. If spudded down, the time may be recorded as underway hours. For example, SMILAX's underway hours, which were the highest of the fleet, generally include overnight time. Identifying the different record-keeping practices employed throughout the fleet and quantifying their impacts is beyond the scope of this analysis.
- Historic WLIC operational data in most cases includes varying amounts of buoy servicing. Weighting those hours equally with construction hours may not be appropriate.

To determine the minimum fleet size capable of supporting mission requirements, a target employment figure is required by which DSS outputs can be judged to represent a vessel that is either over or under-utilized. The method employed by this analysis to determine the target was based on a mix of historic data, published standards, and derived results. There are two published limitations on WLIC operations⁵. The first is a limit of 165 days away from home port. Because of the restricted size of WLIC operational areas, this figure is seldom significant. Where it becomes significant, restricting yard maintenance to the tender's home port area may be an effective means of controlling the problem, since no WLIC's total of underway days exceeds 165.

The second published limitation is the requirement for 95 days of dedicated maintenance, leaving 270 days per year available for operations. This figure is an upper limit, which is seldom approached in practice. Based on the cutter being employed in operations for 5 days per week during non-maintenance periods, 200 operational days per year are available.

⁵ U.S.C.G. Commandant Instruction 3100.5, Cutter Employment Standards. July 22, 1991.

Of these 200 "operational" days, some must be spent in port, conducting training, loading materials, off-loading wreckage, and performing other activities in support of the underway mission. In SFM 2000 for WLMs and WLBs, the ratio of underway days to in port operational days was 3:1, calling for 150 of the 200 days to be spent underway. This ratio is significantly different than recorded WLIC operations: the historical mean for WLICs is 1.4, and the median is 1.6. (Much of the difference between the WLM/WLB and WLIC ratios is attributable to WLICs having to dismantle and dispose of wreckage retrieved from damaged structures upon returning to port.) An examination of individual WLICs shows that the "busiest" construction tenders reported a higher ratio than those reporting fewer underway days and hours. A conservative ratio of 1.5:1 (60%) would give a target of 120 underway days, which is close to the totals reported for those vessels currently considered fully employed.

Because of the nature of WLIC operations, only part of each "underway" day is spent actually in transit or performing construction. Fleet-wide, the average underway hours per underway day is 14 hours.

Historic data indicates that WLICs are highly focused on ATON. For the fiscal years 1990-1992, 90% of all reported operations were for ATON. In FY 1992, WEDGE had been determined to be in excess of District 8's needs and plans were initiated for its conversion to a river buoy tender. That year, WEDGE was detailed to build a dock for the National Data Buoy Center, recording nearly 2000 hours outside the ATON mission. Excluding that one year of WEDGE data, the WLIC fleet averaged 92.5% of its underway hours on the ATON mission. For the purposes of determining operational targets, 90% of underway time was used as the amount of WLIC time to be spent on the construction of fixed aids.

Attributing 90% of the targeted number of WLIC underway hours to the ATON mission results in an operational ATON underway hours target of 1,500 hours (120 days * 14 hours per day * 90% on ATON \approx 1,500 hours). A WLIC would therefore be targeted to spend 1,500 hours per year in transit to and servicing fixed aids to navigation. Table 5 summarizes the derivation of the target and the relevant data from the Abstract of Operations.

TABLE 5. DERIVATION OF WLIC UNDERWAY HOURS TARGET

(from FY 90-92 U.S.C.G. Abstract of Operations)

ANNUAL EMPLOYMENT HOURS							
90-92 Averages	D2 (from D8)	D5	D7	D8	Under- way Total	In Port Opera- tions	High Readi- ness
ATON	55.5	253.6	454.3	513.5	1276.8	594.9	502.3
Other	0.4	15.4	36.5	93	145.4	81.1	25.3
Totals	55.9	269	490.8	606.4	1422.2	676.0	527.6
% ATON					89.8%	(= 90%)	
PERCENT UNDERWAY DAYS							
		1990	1991	1992	90-92		
Underway Days		109.4	100.1	96.4	102.0		
In Port Operations Days		72.6	84.6	62.8	73.3		
% Underway Days		60%	54%	61%	58%	(= 60%)	
UNDERWAY HOURS PER DAY							
90-92 Avg. Days		102					
90-92 Avg. Hours		1422.2					
Avg. Hours / Day		13.94	(= 14)				
DERIVATION OF UNDERWAY TARGET HOURS							
Calendar Days					365		
Less Maintenance Days					95		
Less Weekends					70		
Available Days					200		
% Underway					60%		
Available Underway Days					120		
Avg. Hours / Day					14		
Available Hours / Year					1680		
Historic % ATON					90%		
Available ATON Hours					1512	(= 1500)	

An additional consideration in applying an underway hours target limit is that the derived log represents an average year of construction work. A fleet that was projected using the 1,500 hour target may not always be able to meet peak year requirements within those hours. However, the limit is not a finite point that, if exceeded in peak years, would necessarily strain the abilities of the vessel and crew. Similarly, lower hours during off-peak years do not necessarily represent inefficiency. Recognizing that trade-offs have to be made between being able to respond to peak years and operating efficiently, DSS utilization amounts of greater than 1,500 hours are prohibited when developing the projected fleet. Similarly, three or more adjacent tenders for which the DSS reports utilization amounts of greater than 90% would warrant further consideration, and would generally be regarded as unacceptable.

3.7 Projected WLIC Fleet Size

Based upon projected DSS hours as a percentage of historical reported AOPS hours, as shown in Table 3's "DSS/AOPS Hours" column, opportunities for combining the construction work of some WLICs were evident. Specifically, it appeared that one WLIC might be able to perform the construction work in each of the five Coast Guard Groups that currently have two WLICs -- Group Mayport in D7 and Groups Mobile, New Orleans, Galveston, and Corpus Christi in D8. In addition, it appeared that two construction tenders might be sufficient for District 5. For each of the five groups and District 5, the DSS was used to evaluate the potential for fleet reductions.

In District 5, by reassigning KENNEBEC's 77 activities between SLEDGE and PRIMROSE, combined with a shift of some of PRIMROSE's activities to SLEDGE, DSS results indicate that two tenders could serve District 5.

In District 7, DSS results indicate that the activities of RAMBLER, (Charleston, SC), SMILAX (Brunswick, GA), and HAMMER (Mayport, FL) could be performed by two tenders home ported in any two of the three current ports.

In District 8, applying one tender to the workloads of each group's two tenders indicated that Groups Corpus Christi (1,111 hours) and New Orleans (1,416 hours) would be under the 1,500 underway hours limit, but Groups Galveston (1,531 hours) and Mobile (1,615) would exceed the limit. However, by shifting group boundaries to utilize the available capacities in Corpus Christi and New Orleans, all four tenders could be brought within the limit.

Appendix E contains the associated one-page DSS reports, and Table 6 summarizes the results.

TABLE 6. DSS RESULTS FOR COMBINED WLICs

WLIC	Home Port	Structure Visits	Avg Visits /trip	Avg Days /trip	DSS Hours	DSS / 1500 Target Hours	Transit Time / Service Time
<u>District 5</u>							
PRIMROSE/ KENNEBEC	ATLANTIC BEACH	140	3.9	2.4	1297	86%	6.7
SLEDGE/ KENNEBEC	BALTIMORE	122	4.1	2.5	1200	80%	9.5
<u>District 7</u>							
RAMBLER/SMILAX	CHARLESTON	71	2.2	1.9	727	48%	3.9
HAMMER/SMILAX	MAYPORT	96	2.9	2.2	923	62%	6.8
SMILAX/RAMBLER/ HAMMER	BRUNSWICK	167	3.4	2.7	2175	145%	5.4
<u>District 8</u>							
ANVIL/MALLET	CORPUS CHRISTI	134	3.3	2.0	1111	74%	4.3
CLAMP/HATCHET	GALVESTON	220	4.7	2.1	1531	102%	1.4
SAGINAW/AXE	MOBILE	255	6.4	2.8	1615	108%	2.4
PAMLICO/WEDGE	NEW ORLEANS	198	4.3	2.2	1416	94%	5.0
<u>After Shifting Group Boundaries</u>							
ANVIL/MALLET	CORPUS CHRISTI	162	3.9	2.4	1466	98%	5.4
CLAMP/HATCHET	GALVESTON	196	4.3	2.2	1424	95%	1.3
SAGINAW/AXE	MOBILE	235	6.0	2.7	1492	99%	2.4
PAMLICO/WEDGE	NEW ORLEANS	214	4.7	2.3	1489	99%	4.9
<u>With Fifth WLIC at Morgan City</u>							
ANVIL	CORPUS CHRISTI	153	3.7	2.1	1165	78%	4.4
CLAMP	GALVESTON	162	3.7	1.6	859	57%	.8
HATCHET	MORGAN CITY	127	4.9	2.6	1141	76%	3.8
SAGINAW	MOBILE	170	5.3	2.5	1194	80%	2.4
PAMLICO	NEW ORLEANS	194	4.5	2.0	1064	71%	4.1

3.8 Comparison of Derived and Actual Log File Results

DSS results for the compiled logs of MALLET and HUDSON are shown in Table 8 (Page 18).

MALLET's derived log consisted of 63 aid visits requiring 611 hours, and its compiled actual log consisted of 80 visits requiring 732 hours. Without shifting group boundaries, the additional 121 hours could be absorbed by the projected Corpus Christi tender. If group boundaries were shifted, the additional hours would put all four projected tenders closer to or over the 1,500 hour target.

The difference in DSS results for HUDSON's derived and actual log files does not affect the projected fleet size. The derived log consisted of 109 aid visits requiring 923 hours, and the actual log file consisted of 183 aid visits requiring 1,273 hours. Although the difference is significant, the derived log results in combination with HUDSON's large operating area supported the continued need for a WLIC in Miami, making the difference between the two log files inconsequential.

4 COMPARISON OF WLIC AND PRIVATE SECTOR COSTS

4.1 Data Limitations

The Volpe Center's 1990 contracting evaluation of Coast Guard Aids to Navigation Teams utilized data from actual private sector bids received in response to statements of work for performing ATON servicing at five different locations. Contracts were awarded at three of those five locations. As a result, the 1990 study had access to actual private sector costs that could be directly compared with Coast Guard costs along with qualitative data on contractor performance results.

This analysis of WLICs was initiated from the Coast Guard's own interest in exploring the relative costs of the WLIC fleet. No trial contracts have been developed or are planned. Therefore, private sector cost data directly related to the operations of the 16 current WLICs was not available.

Instead, current Coast Guard contracts for marine construction in Districts 11 (California) and 13 (Oregon and Washington) served as the source of comparable private sector costs. An underlying assumption was that the conditions necessary for building aid structures are consistent across geographic areas. For example, although generally water depths are greater and seas are rougher in the Pacific Northwest than in the Gulf, structures can only be built in the relatively shallower and calmer waters of Districts 11 and 13, making the actual conditions for building structures comparable to those in the Gulf. However, possible differences in costs of living and marine construction costs between the areas covered by the two contracts and the areas currently worked by WLICs are not reflected. Based on the differences that were observed between the D11 and D13 contracts, those differences may be significant. Economies of scale that might be realized from higher volumes of construction work than those represented by the D11 and D13 contracts are also not reflected.

In addition, for the three locations examined, it was assumed that contractor facilities would be located at the current WLIC home ports. Efficiencies that could be gained from a contractor operating from multiple facilities within a single WLIC's operating area are therefore not reflected.

Finally, the USCG Corporate Data Base (CDB), which was utilized by this analysis as the source of current WLIC operating costs, does not differentiate between construction and buoy activities. To counter this limitation, an approach was developed for estimating WLIC construction costs based on the percentage of resource hours required for construction activities in comparison to the total resource hours required for all activities, using DSS results for actual WLIC logs.

4.2 Costs Not Included

In the interests of simplicity and expedience, some costs relevant to a contracting analysis were assumed to be zero because their magnitudes were not considered to warrant significant attention at this time. These cost elements include indirect mission support costs associated with ATON construction activities, tender salvage values and disposal costs, contract administration costs, and contractor payments of social security and federal taxes.

4.3 WLIC Operating Costs

Operating Costs for the 16 current WLICs were developed from the USCG Corporate Data Base as follows:

- Average full direct costs were compiled for the years 1991 through 1993. Full direct costs are vessel specific and can be broken down into Personnel (AFC 10-12), Operations and Maintenance (AFC 30), and Engineering (AFC 42-45).
- Costs associated with ATON supplies and services, which would not be expected to change under a contracting scenario, were ignored.
- Personnel costs were standardized. This was done by multiplying Unit Personnel Costs from the CG's Standard Personnel Cost Tables by vessel personnel allowances (crew size and grades).
- Yearly costs were converted into 1993 dollars by using inflation factors based on the Consumer Price Index (CPI).
- Vessel specific and fleet-wide costs were calculated by averaging the adjusted yearly costs. A summary of the results is provided in Table 7.

Table 7 represents the total operating costs of WLICs, but only the costs associated with construction activities are relevant to this analysis. To determine the construction-related cost component of the total operating costs, the proportion of construction-related work to total work was developed through use of the Aids to Navigation Service Force Mix DSS.

TABLE 7. WLIC OPERATING COSTS
In 1993 Dollars

Summary 91-93	Personnel	O&M	Engineering	Total
WLIC 75s				
16901 ANVIL	\$ 398,572	\$85,303	\$108,547	\$592,422
16902 HAMMER	398,572	102,659	81,867	583,098
16903 SLEDGE	417,335	249,102	280,925	947,362
16904 MALLET	398,572	74,788	85,480	558,840
16905 VISE	417,335	102,781	233,239	753,355
16906 CLAMP	398,572	85,140	172,391	656,103
16907 WEDGE	398,572	94,289	180,567	673,428
16909 HATCHET	398,572	108,294	310,664	817,530
16910 AXE	398,572	112,076	197,246	707,894
WLIC 75 AVERAGE	\$402,742	\$112,714	\$183,436	\$698,892
WLIC 100s				
16305 PRIMROSE	508,452	200,131	80,387	788,971
16306 RAMBLER	569,211	141,342	324,003	1,034,555
16307 SMILAX	482,118	124,560	364,075	970,753
WLIC 100 AVERAGE	519,927	155,344	256,155	931,426
WLIC 160s				
17003 KENNEBEC	437,866	166,088	291,651	895,606
17001 PAMLICO	437,866	124,935	179,939	742,740
17002 HUDSON	437,866	151,807	211,554	801,227
17004 SAGINAW	437,866	131,948	255,419	825,233
WLIC 160 AVERAGE	437,866	143,695	234,641	816,201
ALL WLICS AVERAGE	433,495	128,453	209,872	771,820

4.4 Determining WLIC Construction Proportions

The DSS was used to provide a relative indication of construction-related activities in comparison to the total activities of WLICs. This was accomplished by comparing the DSS' reported number of hours for selected WLICs to perform all of their work with the reported number of hours for those tenders to perform only their construction work. As mentioned previously, the available operational data (ATONIS) did not sufficiently lend itself to this task. Instead, a request was made of each of the three relevant districts to provide the Volpe Center with at least one representative WLIC ship log which could be translated into an aid activity file for use with the DSS.

Ship log data was received from District 7 (HUDSON: Miami, FL) and District 8 (SAGINAW: Mobile, AL; and MALLET: Corpus Christi, TX). Service times for the log activities were derived by matching the indicated log activity descriptions with the WLIC questionnaire service time categories, as shown in Appendix B. Table 8 summarizes the three log files.

**TABLE 8. SUMMARY OF HUDSON, MALLET, AND
SAGINAW LOG FILES**

	HUDSON	MALLET	SAGINAW*
Log File Months	23	15	21
Aid Visits			
Total	662	412	654
Construction Visits	349	97	466
% Construction	53%	24%	71%
On Station Servicing Time			
Total Hours	695.5	314.9	1,421.5
Construction Hours	613.3	187.2	1,282.0
% Construction	88.2%	59.4%	90.2%
DSS Hours (for 1 Year)			
Total Visits	405	366	0
Construction Visits	183	80	0
Total Hours	1,482	943	0
Construction Hours	1,273	732	0
% Construction Hours	85.9%	77.6%	85.9%
	↓		↑

* Because the DSS could not be run for SAGINAW due to the absence of Aid Numbers on the SAGINAW log file, HUDSON's % Construction was applied to SAGINAW.

4.4.1 HUDSON Log

HUDSON's log covered October, 1991 through September, 1993 (23 months). The file was the most easily adapted for use because each individual activity was coded by whether or not a WLIC was necessary to perform the activity and by the actual amount of on-station time that was required. Of the 662 activities included in the file, 349 required a WLIC (53% of total activities) and consumed a total of 613.3 on-station service hours (88% of total on-station time). The remaining 313 activities (47% of total activities) not requiring a WLIC consumed only 82.2 hours of on-station service time (12% of on-station service time). The large difference in on-station time in comparison to aid servicing activities is explained in part by HUDSON's extensive use of its small boat crew to perform non-construction activities while the tender performs construction work. Appendix F, Page F-5, shows the breakdown of on-station service time for HUDSON's log file. Pages F-8 through F-14 show the HUDSON log file's "Indicated Actions", the corresponding "Derived Actions", and whether or not a WLIC was needed. Again, for HUDSON, the determination of whether or not a WLIC was needed was provided on the log file by the tender.

The DSS results for one year of HUDSON's activities showed a total of 1,482 hours. The corresponding one-page summary report is contained in Appendix F (Page F-1). The DSS

results for one year of HUDSON's construction-only activities reported a total of 1,273 hours. The corresponding one-page summary report is contained in Appendix F (Page F-2). The resulting proportion of construction time to total time is 85.9%. This proportion, when applied to HUDSON's average operating costs from the CDB, result in an average annual operating cost of \$688.3 thousand for HUDSON's construction activities.

4.4.2 MALLET Log

MALLET's log covered June, 1992 through September, 1993 (15 months). Of the 412 activities included in the file, 97 required a WLIC (24% of total activities) and consumed a total of 187 on-station service hours (59.4% of total on-station time). The remaining 315 activities (76% of total activities) not requiring a WLIC consumed 127.7 hours of on-station service time (40.6% of on-station service time). Appendix F, Page F-6, shows the breakdown of on-station service time for MALLET's log file. Pages F-14 through F-17 show the MALLET log file's "Indicated Actions", the corresponding "Derived Actions", and whether or not a WLIC was needed.

The DSS results for one year of MALLET's activities showed a total of 943 hours. The corresponding one-page summary report is contained in Appendix F (Page F-3). The DSS results for one year of MALLET's construction-only activities reported a total of 732 hours. The corresponding one-page summary report is contained in Appendix F (Page F-4). The resulting proportion of construction time to total time is 77.6%. This proportion, when applied to MALLET's average operating costs from the CDB, results in an average cost of \$433.7 thousand for MALLET's construction activities.

4.4.3 SAGINAW Log

SAGINAW's log covered January, 1992 through September, 1993 (21 months). Of the 654 activities included in the file, 466 required a WLIC (71% of total activities) and consumed a total of 1,282 on-station service hours (90.2% of total on-station time). The remaining 188 activities (29% of total activities) not requiring a WLIC consumed 139.5 hours of on-station service time (9.8% of on-station service time). Appendix F, Page F-7, shows the breakdown of on-station service time for SAGINAW's log file. Pages F-17 through F-20 show the SAGINAW log file's "Indicated Actions", the corresponding "Derived Actions", and whether or not a WLIC was needed.

Due to the absence of an Aid Number field on SAGINAW's log file, its log records could not be linked to the ATONIS Aid file. As a result, geographic aid locations and associated aid data could not be determined, so the DSS could not be applied to SAGINAW's log. However, both HUDSON and SAGINAW are 160-foot WLICs and their proportions of on-station service times were relatively equal -- 88% on-station construction time for HUDSON compared to 90.2% for SAGINAW. Therefore HUDSON's proportion of DSS construction hours to total hours (85.9%) was applied to SAGINAW. This proportion, when applied to SAGINAW's average operating costs from the CDB, result in an average cost of \$708.9 thousand for SAGINAW's construction activities.

Table 9 summarizes the construction costs for HUDSON, MALLET, and SAGINAW.

TABLE 9. WLIC CONSTRUCTION OPERATING COSTS

In 1993 Dollars

WLIC	Operating Cost	% Construction (from DSS)	Construction Cost
HUDSON	\$801,227	85.9 %	\$688,254
SAGINAW	825,233	85.9 %	708,875
MALLET	558,840	77.6 %	433,660

4.5 Private Sector Costs

Existing Coast Guard contracts for marine construction in the Columbia River (D13) and in San Francisco Bay (D11) served as the basis for the development of representative private sector costs. The line items of both contracts were reviewed and compiled into a spreadsheet that could be associated with the log file activities of HUDSON, MALLET, and SAGINAW. The spreadsheet is contained in Appendix G.

The construction-related records within each of the three log files were reviewed and linked to the related items in both of the West Coast contracts. This process relied on the remarks provided on the log files, the structure types and pilings from ATONIS (for MALLET and HUDSON), and the log file Aid Name field (for SAGINAW). Appendix H shows the resulting distribution of the construction activities for each of the three WLICs.

The activities of the three WLICs were then linked to the contract line items and tabulated. Appendix I shows the breakdown of the work order quantities resulting from the linking of the activities to the contract line items, and Appendix J summarizes the Appendix I tables through six corresponding summary tables (3 WLICs * 2 contracts). As an example of the contents of the tables, the MALLET/Columbia River table is shown as Table 10.

**TABLE 10. MALLET LOG ACTIVITY PERFORMED
THROUGH COLUMBIA RIVER CONTRACT**

	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
ITEM 1: MOBILIZATION/ DEMOBILIZATION					
Visits Per Trip	1	3	4	7	9
Required Number of Trips	97	32	24	14	11
Mobilization/Demob. Costs Per Trip	\$5,500	\$5,500	\$5,500	\$5,500	\$5,500
TOTAL MOBILIZATION/DEMOB.	\$533,500	\$177,833	\$133,375	\$76,214	\$59,278
ITEM 2: TRANSIT COSTS					
Transit Costs Per Mile	\$60	\$60	\$60	\$60	\$60
Average Miles Per Trip	157	175	194	213	235
TOTAL TRANSIT COSTS	\$914,542	\$338,719	\$282,266	\$177,424	\$151,796
ITEM 3: REMOVALS	\$197,200	\$197,200	\$197,200	\$197,200	\$197,200
ITEM 4: MATERIALS	\$0	\$0	\$0	\$0	\$0
ITEM 5: INSTALLATIONS	\$220,000	\$220,000	\$220,000	\$220,000	\$220,000
ITEM 6: REPAIRS	\$29,700	\$29,700	\$29,700	\$29,700	\$29,700
ITEM 7: DIVING SERVICES	\$0	\$0	\$0	\$0	\$0
ITEM 8: FIELD ENGINEERING	\$0	\$0	\$0	\$0	\$0
ITEM 9: BUOYS	\$0	\$0	\$0	\$0	\$0
ITEM 10: DELIVER REMAINING MATERIALS	\$0	\$0	\$0	\$0	\$0
ITEM 11: PICK UP MATERIALS REMAINING	\$0	\$0	\$0	\$0	\$0
ITEM TOTALS: 15 Months	\$1,894,942	\$963,453	\$862,541	\$700,539	\$657,974
ADJUSTED TOTALS: 12 Months	\$1,515,954	\$770,762	\$690,033	\$560,431	\$526,379

The five scenarios shown in Table 10 correspond to the possibilities that were examined for the number of aids visited per trip, ranging from 1 to 9. Scenario 3, which is shaded, was determined to be the scenario that best represents MALLET's construction activities based on the one-year DSS run of MALLET's construction work (see Appendix F, Page F-4). The DSS reported that MALLET visited 4.0 aids per trip which corresponds to Scenario 3. Visiting 4 aids per trip, the 97 aid visits in the MALLET log file would require 24.25 trips. Each trip was priced at an average of \$5,500 by the Columbia River contract, for a total Item 1 (Mobilization/Demobilization) cost of \$133,375.

Item 2 (Transit Costs) was developed based on the average miles per trip reported by the DSS (again, for MALLET, see Appendix F, Page F-4). Servicing 4 aids per DSS trip and making 20 trips, MALLET transited at 6 knots for 561.92 hours, for a total of 3,372 nautical

miles, or 3,880 standard miles. Dividing by 20 trips, the average trip was slightly less than 194 miles. Under Scenario 3, 24.25 trips were necessary and the Columbia River contract cost per mile was \$60. Total transit costs were therefore $194 * 24.25 * \$60$, or \$282,266. For the other four scenarios, a 10% change in miles per trip, starting from Scenario 3's 194 miles per trip, was used as an estimate of the effect of servicing one more or one less aid per trip (90% of 194 = 175, 90% of 175 = 157; and 110% of 194 = 213, 110% of 213 = 235).

Items 3 (Removals), 5 (Installations), and 6 (Repairs) were based on applying the associated contract costs to the corresponding number of activities indicated on the log files. The Item 4 (Materials) cost of \$0 was based on the assumption that, as at present, the government would provide all materials and that those costs are not included under WLIC operating costs. For Items 10 (Deliver Remaining Materials) and 11 (Pick Up Materials Remaining), it was assumed that a contractor would be able to accommodate the receipt and storage of materials at their own facilities and that any associated costs (which are also not currently included under WLIC operating costs) would not be significantly different than those currently incurred by the government. Items 7 (Diving Services), 8 (Field Engineering), and 9 (Buoys) were also not considered significant.

Table 11 shows the resulting comparisons of government and contract costs for HUDSON, SAGINAW, and MALLET.

**TABLE 11. COMPARISON OF GOVERNMENT
& CONTRACTED ANNUAL OPERATING COSTS**
In 1993 Dollars

WLIC	USCG Construction Cost	Average Visits per Trip (Scenario 3)	Cost Using Columbia River Contract	Cost Using San Francisco Contract
HUDSON	\$688,254	5.8	\$1,248,991	\$1,981,150
SAGINAW	708,875	5.5	1,686,994	2,531,306
MALLET	433,660	4.0	690,033	1,067,807

4.6 Life Cycle Cost Analysis

G-NSR has developed an initial estimate of \$7.7 million to acquire a new WLIC of the 160-foot class. The estimate is based on the current acquisition costs of the replacement WLMs and WLBs. Appendix K contains the spreadsheets used to develop life cycle costs for HUDSON, MALLET, and SAGINAW. To be conservative, the lower of each tender's two contract costs -- which in each case corresponded to the Columbia River contract -- was chosen for comparison with government costs. The life cycle was based on the arbitrary premise that each vessel would remain in operation for ten more years and then be replaced with a new 160-foot WLIC that would continue in operation for another 30 years. Table 12 contains a summary of the life cycle costs contained in Appendix K.

**TABLE 12. COMPARISON OF GOVERNMENT
AND CONTRACTED LIFE CYCLE COSTS**

In 1993 Dollars

(\$K)	MALLET through USCG	MALLET through Contract	HUDSON through USCG	HUDSON through Contract	SAGINAW through USCG	SAGINAW through Contract
O&M Costs (40 years)	17,346	27,601	27,530	49,960	28,355	67,480
Capital(replaced in 2003)	7,700	0	7,700	0	7,700	0
Total 40 Year Cost	25,046	27,601	35,230	49,960	36,055	67,480
Total Discounted (@4%)	14,129	14,204	19,369	25,710	19,794	34,726

The life cycle cost results indicate that private sector contract costs exceed those of Coast Guard construction tenders for all three tenders. However, the MALLET private sector costs exceed government costs by less than 1%. If actual life cycle contract costs are \$75,000 less than projected, or MALLET's life-cycle costs are \$75,000 more than projected, the MALLET costs would exceed private sector costs.

The relatively poorer cost performance of MALLET in comparison to HUDSON and SAGINAW can be attributed to its relative lower level of utilization. Although MALLET is responsible for more buoys (283) than either HUDSON (36) or SAGINAW (70), DSS underway hours indicated that 77.6% of MALLET's costs were attributable to construction activities, versus 85.9% for HUDSON (whose percentage was also applied to SAGINAW). MALLET's estimated average annual construction operating costs of \$433,660 are 63% of HUDSON's \$688,254 and 61% of SAGINAW's \$708,875. However, MALLET's 80 average annual construction visits are only 43% of HUDSON's 183 visits and 30% of SAGINAW's 266 visits. The differences in operating costs are not consistent with the workload differences. The resulting higher average unit costs for MALLET contribute significantly to making it less competitive with private sector costs.

MALLET's higher unit costs are reflective of the higher operating costs per underway hour of the 75-foot class of WLICs when compared to the 160-foot class. The average annual Abstract of Operations underway hours (see Table 3) shows that, of the 16 construction tenders, the highest reported AOPS underway hours was for a 100-footer (SMILAX), followed in order by the four 160-footers (PAMLICO, HUDSON, KENNEBEC, and SAGINAW), the remaining two 100-footers (PRIMROSE and RAMBLER), and then the nine 75-footers -- of which MALLET was actually the highest. Although the average annual operating costs of the 75-foot class are similarly less than those of the 100-foot or 160-foot classes (see Table 7), the cost per underway hour is actually higher. Adding up Table 3's AOPS hours by class and dividing the sums into Table 7's annual operating costs, the average costs per underway hour are \$721, \$568, and \$481 for the 75-foot, 100-foot, and 160-foot classes, respectively.

The lower utilization figures for the 75-foot class, when combined with the relatively fixed personnel and engineering costs, produce the significantly higher average unit costs. Why the 75-foot class is relatively under-utilized is not a subject of this analysis, and may in fact be coincidental. Regardless, a relatively under-utilized tender compares less favorably with private sector costs than one that is fully utilized. If the under-utilization of the 75-foot class is due to design limitations, the Coast Guard's intention of limiting future WLIC acquisitions to vessels of the 160-foot class would help maintain the government's cost advantage, as shown by the life cycle cost results for HUDSON and SAGINAW.

5 WLIC QUALITATIVE MISSION FACTORS

The projected WLIC fleet size and the private sector cost comparison developed by this analysis consider only an average annual level of fixed aid construction activities performed by the WLIC fleet. Reducing or eliminating the WLIC fleet would affect the availability of WLICs to perform the other activities in which they are currently employed, and could potentially impact the Coast Guard's ability to respond to both peak and average levels of fixed aid construction requirements. Although difficult to quantify, the other WLIC activities need to be considered before making changes to the WLIC fleet.

To account for the additional WLIC activities, this analysis developed a list of relevant factors. Because relevant inputs and net effects are either unavailable or would require a level of effort beyond the scope of this analysis, the factors were developed from a qualitative rather than quantitative perspective. They were derived from a combination of past Volpe Center efforts and discussions with Coast Guard ATON personnel at each of the three districts in which WLICs are located.

Compilation of the qualitative factors was focused on the two key considerations of this analysis -- a reduction in the WLIC fleet size and contracting for fixed aid construction. Some factors, such as surge response (the ability to respond to surges in fixed aid construction requirements) and non-ATON support to other Coast Guard missions, were relevant to both a reduced WLIC fleet and to the contracting of the construction component. Other factors, such as quality assurance and control of discretionary preventive maintenance were relevant only to the contracting area. Table 13 shows the compiled list of WLIC mission factors broken out by the inputs of the three districts and the two areas considered -- reducing the WLIC fleet size and contracting for the construction component. Check marks indicate where potentially adverse effects were identified. For example, a check mark appears in the "Surge Response" row under District 5's "Impacted by Reduced Fleet" column because, based on inputs from the district, it was concluded that D5's ability to respond to a surge response would be adversely affected by a reduced fleet size. Each factor is discussed below.

5.1 Surge Response

Surge response refers to the need to service quickly large numbers of ATON discrepancies caused by weather extremes such as hurricanes, severe icing, severe droughts, and major coastal storms. Underlying this concern is the broader issue of operating philosophy that is beyond the scope of this analysis: how quickly must surge response requirements be met? Discrepancy response factors are computed by the Coast Guard for every discrepant aid, based upon the criticality of the aid and the nature of the discrepancy. Unless a fixed aid discrepancy imposes a hazard to navigation (such as when structure wreckage is blocking a channel), the discrepancy can be temporarily fixed by an Aids to Navigation Team through the deployment of temporary buoys. A WLIC will permanently repair the discrepancy when it can be worked into its schedule.

TABLE 13. WLIC MISSION FACTORS

Mission Factors	District 5		District 7		District 8	
	Affected by Reduced Fleet	Affected by Contracting Out	Affected by Reduced Fleet	Affected by Contracting Out	Affected by Reduced Fleet	Affected by Contracting Out
Surge Response	✓	✓	✓	✓	✓	✓
Buoy Work		✓		✓		✓
ATON Support to Other CG Districts	✓	✓			✓	✓
Discretionary Preventive Maintenance		✓		✓		✓
Quality Assurance		✓		✓		✓
Scheduled and Unscheduled Vessel Maintenance	✓	✓	✓	✓	✓	✓
Coast Guard Infrastructure		✓	✓	✓		✓
Non-ATON Support to Other CG Missions	✓	✓	✓	✓	✓	✓
Non-ATON Marine Construction	✓	✓	✓	✓	✓	✓
Heavy Lift Capability and Cable Repairs	✓	✓				
Coast Guard Visibility and Public Perception	✓	✓	✓	✓	✓	✓

Table 14 shows the average discrepancy response levels of the current 16 WLICs. The report was developed based on the 1990-1993 ATONIS discrepancy file. The discrepancy response level is the product of the ATONIS aid file "Discrepancy Response Factor 1" field and the ATONIS discrepancy file "Discrepancy Code" field. Because not all discrepancies could be linked to the aid file, and because not all that were linked had non-zero values in the relevant fields, not all of the discrepancies were included in computing the average response levels. The table provides an indication of the relative criticality of discrepancy response for the 16 WLIC areas. Due to the number of discrepancies for which response levels could not be computed, combined with the use of ANTs to provide an initial response which may alter the construction tender response requirement, no overall conclusions could be made from the table.

TABLE 14. AVERAGE 1990-1993 WLIC DISCREPANCY RESPONSE LEVELS

Dis- trict	WLIC	Port	Total Discrepancies	Computable Discrepancies	Average Discrepancy Resp. Level
7	WISE	ST PETERSBURG	310	175	138.7
8	PAMLICO	NEW ORLEANS	270	130	151.1
8	ANVIL	CORPUS CHRISTI	178	40	182.8
7	HUDSON	MIAMI	216	117	190.1
8	MALLET	CORPUS CHRISTI	166	62	205.0
7	RAMBLER	CHARLESTON	117	63	205.9
8	HATCHET	GALVESTON	201	89	212.8
8	AXE	MOBILE	251	54	213.3
8	SAGINAW	MOBILE	491	111	220.6
8	WEDGE	NEW ORLEANS	336	139	220.9
5	SLEDGE	BALTIMORE	17	13	240.2
8	CLAMP	GALVESTON	431	133	243.6
7	SMILAX	BRUNSWICK	111	59	281.4
5	KENNEBEC	PORTSMOUTH	63	24	282.5
5	PRIMROSE	ATLANTIC BEACH	324	102	303.4
7	HAMMER	MAYPORT	194	130	313.7

Coast Guard Discrepancy Response Levels			
600 and up	IMMEDIATE		
450 - 599	HIGH PRIORITY	(within 18 hours)	
275 - 449	PRIORITY	(within 36 hours)	
150 - 274	ROUTINE	(within 72 hours)	
1 - 149	DECISION/DEFERRED	(as practical)	

Surge response requirements are unpredictable, yet contingency planning for execution and coordination has to be in place to mitigate the adverse effects to public safety and national economy. The 1990 Volpe Center contracting study stated:

"In recent years there have been numerous cases where surge response was critically instrumental for restoring public safety to large sections of the nation that were devastated by hurricanes and flooding. [These] cases point out the national need for a geographically diversified capability in order to ensure the safety and security of the navigable U.S. waters. Clearly in those districts that are subject to extreme weather conditions the ATON resources are essential for surge response."

Effects of Reduced Fleet

A reduced fleet size would cause a decrease in the capacity to respond to unexpected surges in the demand for fixed aid construction. The relative effects would depend on an individual tender's typical work profile -- a tender that is fully employed doing fixed aid construction but which spends proportionately more time on non-discrepancy types of construction (which are more conducive to being deferred to a later date) could more readily

provide surge response. Conversely, a tender that is already primarily employed in discrepancy response would be less able to absorb surge response requirements. Relative servicing priorities would be more apparent in the first case, but in both cases there would be less capacity within the 1,500 hour target limit to provide both regular services and surge response.

Table 15 shows the relative proportions of discrepancy and non-discrepancy responses by tenders and districts. The table was developed from Table 2, which contained the derived 1992 construction log file activities. It provides an indication of the relative levels of discrepancy and non-discrepancy responses for the current construction tender fleet. In the Fifth District, 46% of WLIC activities were for discrepancy response, in the Seventh District this number was 74.2%, and in the Eighth District it was 82.8%.

Depending upon the size of the required surge response, the impacts could be felt by anywhere from a single tender up to the entire construction tender fleet. At those locations where home ports are projected to be eliminated (Portsmouth, VA, and Brunswick, GA), average distances between home ports and discrepancy response locations will increase, resulting in greater average response times for both regular and surge response requirements.

Effects of Contracting

If the required level of surge response mandates that additional resources be shifted from other areas, the ability to relocate contractor vessels and crews may be more difficult and expensive than those incurred in relocating Coast Guard resources.

If the required level does not warrant the shifting of resources, the ability of a contracted fleet to respond to a surge response may still differ significantly from those of the Coast Guard, depending in large part on how the contract is structured. After a major storm, contractors could be faced with competing demands on their resources, whereas Coast Guard resources are dedicated to Coast Guard requirements. A contract could be structured and funded to specify that a contractor must give priority to Coast Guard requirements, but the ability of the Coast Guard to enforce such requirements within the period of time required to meet a surge response would be of concern. One scenario offered was if, during a period when a significant surge response was required another customer offered a contractor a premium price for the contractor's services, the contractor might respond by overworking his resources to the point where his resources became incapable of performing to the desired contractual level, or might break down altogether. Problems experienced by contractors in receiving prompt payments from the government might further influence a contractor towards pursuing non-government opportunities that are financially more lucrative and timely.

**TABLE 15. NON-DISCREPANCY VS. DISCREPANCY
PROFILE OF 1992 DERIVED LOG FILE**

WLIC	Non- Discrepancies (*)	% of Total	Discrepancies (**)	% of Total	Total Activities
KENNEBEC	54	71.1	22	28.9	76
PRIMROSE	45	32.8	92	67.2	137
SLEDGE	43	86.0	7	14.0	50
D5 Total	142	54.0	121	46.0	263
HAMMER	8	13.1	53	86.9	61
HUDSON	29	26.9	79	73.1	108
RAMBLER	15	27.8	39	72.2	54
SMILAX	14	26.9	38	73.1	52
WISE	41	29.3	99	70.7	140
D7 Total	107	25.8	308	74.2	415
ANVIL	15	20.8	57	79.2	72
AXE	6	7.5	74	92.5	80
CLAMP	24	16.4	122	83.6	146
HATCHET	10	13.5	64	86.5	74
MALLET	14	22.6	48	77.4	62
PAMLICO	33	30.6	75	69.4	108
SAGINAW	10	5.7	165	94.3	175
WEDGE	28	29.5	67	70.5	95
D8 Total	140	17.2	672	82.8	812
CG Total	389	26.1	1101	73.9	1490

* Non-Discrepancy Activities:

Daybeacons converted to Lights
 Lights converted to Daybeacons
 Removals(& structures converted to buoys)
 Establishments (& buoys converted to structures)

** Discrepancy Activities:

Passing Light Only on DBNs or LTs
 Rebuild/ Wreckage Recovered
 Rebuild/ Wreckage Remains
 Reset on Station

5.2 Buoy Work

Construction tenders are designed for constructing fixed aids to navigation. However, the required design features are also applicable to working certain buoy sizes and locations. As a result, in the absence of alternative resources and where available WLIC capacity exists, construction tenders have historically been assigned regular buoy maintenance responsibilities.

Effects of Reduced Fleet

Because buoy work is one of the primary components of the ATON mission, any reduction in the construction tender fleet must necessarily be combined with either the assignment of an appropriate level of alternative buoy servicing resources to the affected WLIC operational areas, or with the provision for sufficient remaining construction tender capacity to continue doing the buoy work. Where no fleet reduction is realized, WLICs will continue to work buoys as usual. Although further attention to the management and allocation of ATON resources may be required, any reduction in the construction tender fleet will necessarily include appropriate provisions for doing the buoy work, so no net effect should result.

Effects of Contracting

Contracting the construction work performed by WLICs would eliminate their availability for doing buoy work. Alternative methods would have to be pursued to provide those capabilities.

5.3 ATON Support to Other Districts

WLICs also provide fixed aid construction support to other Coast Guard districts. Most significantly, in recent years construction tenders have been dispatched from D5 to D1 and from D8 to D2 for the purpose of building fixed aids to navigation. The volumes of fixed aid construction work in both D1 and D2 do not support the permanent assignment of construction tenders, but the demands and costs of one-time large-scale conversions of floating aids to fixed aids often warrant the temporary transfer of WLICs to accomplish the task.

Effects of Reduced Fleet

A reduced construction tender fleet would impact the ability to provide ATON construction support to other districts.

Effects of Contracting

Contracts would have to be expanded or additional contracts would have to be awarded to perform ATON construction currently provided by WLICs to other Coast Guard districts. When faced with deciding between contracting to convert buoys to structures or continuing to use buoys, the decision to stay with buoys may be made more often.

5.4 Discretionary Preventive Maintenance

In addition to responding to reported discrepancies, construction tender operations also include the performance of preventive maintenance on structures in order to prevent future

discrepancies. During regular operations, if a WLIC commanding officer (CO) notices appreciable deterioration to a structure that otherwise is performing according to specifications and is not technically discrepant, the CO will make an assessment as to the urgency of the situation and the tender will either stop and rebuild the structure at that time or the CO will make plans to return and rebuild the aid at a later date. Factors included in the assessment would be the probability of aid failure, the availability of materials to perform the repairs, and the probability that the tender would be in the area again in the near future.

Effects of Reduced Fleet

Although data supporting the frequency of preventive maintenance activities was not directly available, the derived construction tender log file developed for this analysis took into account such activities through consideration of reported versus derived piling usage figures. Therefore no effect on the Coast Guard's performance of preventive maintenance should result from a reduced fleet size.

Effects of Contracting

Personal, professional, and legal considerations should prevent the misuse of contractor discretion in determining when or whether to perform preventive maintenance. However, required preventive maintenance could be ignored if a contractor is faced with having to pay overtime to complete the job or with the threat of having their judgement questioned and perhaps not being reimbursed. In the latter case, there might be an advantage to the contractor in foregoing the preventive maintenance and waiting until an actual discrepancy occurred. The government might then have to issue an emergency work order that could be more profitable to the contractor than performing preventive maintenance.

5.5 Quality Assurance

A factor related to having the discretion to perform preventive maintenance is quality assurance. Marking the "best water" in a waterway requires knowledge of local conditions and attention to detail. Ensuring proper placement of aids and adherence to sound construction practices is presently accomplished through the experience and commitment of the construction tender crews. Limits on crew endurance and time and cost constraints exist, but there is no financial motivation to cut corners.

Effects of Reduced Fleet

A reduced construction tender fleet would result in larger areas of operation for the remaining tenders. As the areas increase, the ability of COs and their crews to be expert on the features of their assigned waterways may diminish. However, because the smaller fleet will be more focused on the construction element and will only have to be familiar with fixed aid locations, the effects should offset each other, resulting in no net effect on quality assurance.

Effects of Contracting

Contracting the construction of fixed aids creates the opportunity for greater continuity of personnel than is possible under Coast Guard operations, due to the turnover aspect of

military tours of duty. Conversely, contracts are subject to change whenever they are re-competed, and the changeover could constitute 100% of the required personnel. Under a three-year military rotation policy, only one-third of a Coast Guard crew changes every year. Contracting therefore does not appear to imply a consistent effect on quality assurance through the ability to provide continuity of personnel.

Financial considerations, however, could affect quality assurance if a contractor could keep his costs down and still perform within the requirements of their contract. If contractors know they will only be reimbursed according to the terms of their contracts, they might be reluctant to go beyond those terms if they might not be reimbursed. One scenario offered was a situation where an existing contractor did not win a follow-on contract but whose current contract had not yet expired. In a situation where applying resources to a task might prove fruitless or not produce visible results, such as finding and removing the wreckage of a destroyed structure, the motivation to downplay quality assurance could result.

Due to government liability considerations, contracting the construction of aids to navigation would necessitate the provision of adequate government quality assurance resources. Depending on factors beyond the scope of this analysis, government oversight could range anywhere from complete on-sight supervision and verification down to only random and periodic audits and inspections of completed work. Either way, the resulting costs to the government could be considerable.

5.6 Coast Guard Infrastructure

The personnel and vessels associated with the construction of fixed aids to navigation represent a substantial investment on the part of the Coast Guard. The Coast Guard has been constructing fixed aids for 50 years⁶. Experience and proven ability aside, the current institutional structure supporting the construction component provides a pipeline of expertise and supporting resources that help ensure the continued success of the program.

Effects of Reduced Fleet

Due to the rotational aspect of Coast Guard military tours of duty, as the size of a program area decreases, the ability to develop the personnel skills and experience required to continue performing the mission becomes impaired. The Coast Guard is studying this issue in relation to all of its mission areas⁷.

Effects of Contracting

A contracted fleet of construction tenders would eliminate the existing pipeline. As a result, the mechanisms currently in place for developing the skills and experience necessary to provide contract quality assurance would be gone. Today, there would be an ample supply of

⁶ The oldest construction tenders, the 100-foot class, were commissioned in 1944.

⁷ G-PD5, Workforce Planning Division (1994)

qualified personnel available from among the current and past construction tender personnel that are still in the Coast Guard. However, as the personnel produced by the existing pipeline retire, the ability to develop and apply qualified personnel to the task would become more difficult.

5.7 Scheduled and Unscheduled Vessel Maintenance

Unscheduled vessel maintenance is similar to surge response -- the effect is a significant increase in the demand on available resources. Depending upon the amount of downtime involved, the effects of scheduled maintenance can be as significant as unscheduled maintenance, although the ability to plan and prepare for scheduled maintenance generally results in a lower overall impact.

Effects of Reduced Fleet

A reduction in the construction tender fleet size would cause a decrease in the number of coverage options when a tender goes in for maintenance. Limiting the geographic area from which shipyard repair bids are accepted could be a partial solution.

Effects of Contracting

A contracted fleet of construction tenders would present at least the same maintenance problems as those encountered by the Coast Guard's own fleet. With Coast Guard vessels, if the funding for repairs is not available in a tender's maintenance budget, the funding can be transferred eventually from other areas. From a timing perspective, it may be easier for a contractor to procure the repair of their vessels than it is for the Coast Guard, but whether the contractor has the necessary funds could become an issue.

In addition, as with surge response requirements, the ability to relocate contracted vessels and crews in response to vessel maintenance requirements may be more difficult and expensive than those incurred in relocating Coast Guard resources.

5.8 Non-ATON Support to Other CG Missions

WLICs have also been used in support of other Coast Guard missions. In support of marine environmental response activities, WLICs are among the smallest vessels capable of deploying vessel oil skimming systems (VOSS). WLICs have supported the Enforcement of Laws and Treaties (ELT) mission through their ability to provide "hotel services" during ELT operations. Recently, in D8, WLICs have been used in the enforcement of the use of Turtle Exclusion Devices (TED) by commercial fishermen.

Effects of Reduced Fleet

Although historically the amount of support WLICs have provided to other Coast Guard missions has been low in terms of their total underway time (90% of which has been in support of ATON), the impact of a reduced WLIC fleet would depend on the nature and urgency of the required activities and the availability and cost of other resources that might be substituted in their place. If the relative importance of a non-ATON requirement is judged to be greater than

assigned WLIC activities, construction tenders could be diverted from the ATON mission. The resulting impacts would then have to be absorbed by the ATON mission.

Effects of Contracting

Alternative methods would have to be pursued for accomplishing the support currently provided by WLICs to other Coast Guard missions.

5.9 Non-ATON Marine Construction

The marine construction capabilities of Coast Guard construction tenders are sometimes used to build docks and repair bulkheads at Coast Guard facilities and other government agencies, including the National Oceanic and Atmospheric Administration, the Army Corps of Engineers, the Environmental Protection Agency, and the Department of Interior.

Effects of Reduced Fleet

A reduced construction tender fleet would reduce the availability of WLICs for performing non-ATON marine construction.

Effects of Contracting

Alternative methods would have to be acquired to accomplish the non-ATON marine construction services currently performed by WLICs.

5.10 Heavy Lift Capability and Cable Repairs

The Fifth District indicated that the lift capability of WLICs is sometimes used for hoisting large battery packs up onto aid structures and for pulling up and repairing underwater cables. Generally, replacing battery packs is a component of regular aid servicing performed by other units, and not by WLICs. However, the responsible units are most often Aids to Navigation Teams, and they lack the resources necessary to perform the required lifting.

Effects of Reduced Fleet

A reduced construction tender fleet in the Fifth District would reduce the availability of WLICs for performing the heavy lift and cable repair services.

Effects of Contracting

Alternative methods would have to be pursued to accomplish these functions in the Fifth District.

5.11 Coast Guard Visibility and Public Perception

Public perception of the Coast Guard is an intangible asset that is of immense value in procuring the resources necessary to provide required levels of service and for the recruitment and retention of qualified personnel. Construction tenders are highly visible Coast Guard assets. Their appearance in a waterway can provide a mariner with the confidence of knowing that their

interests are being served, and that if there are any problems, they know who to contact to have the situation corrected. Coast Guard personnel encountered in the course of this analysis were universally found to be dedicated and devoted to their work, and concerned about preventing any decrease in service to the mariner.

Effects of Reduced Fleet

Any reduction in the construction tender fleet would primarily be accomplished through off-loading their buoy work onto the 49-foot replacement stern-loading buoy boats currently being acquired by the Coast Guard. Visually, the buoy boats are significantly less imposing than a construction tender, but more than a one-for-one replacement of buoy boats to construction tenders would be required to accomplish the buoy responsibilities. Because the ATON work being performed by the current fleet of construction tenders would still be performed by Coast Guard resources after a fleet reduction, no net effect on Coast Guard visibility from the ATON perspective should occur. However, to the extent that the other functions provided by construction tenders are no longer performed by Coast Guard assets, the Coast Guard's visibility would decrease.

Effects of Contracting

Elimination of the construction tender fleet would significantly reduce the Coast Guard's public visibility in the affected geographic areas. Public perception of Coast Guard performance, however, will remain tied to the performance of the aids to navigation system. If the system fails, the Coast Guard will ultimately remain both accountable and liable.

6 CONCLUSION

This analysis concludes that a fleet of 11 construction tenders would provide the Coast Guard with sufficient resources to meet current levels of fixed aid construction requirements, representing a reduction of five tenders from the current fleet of 16. Considering only annual construction workloads, 10 tenders would be sufficient. However, this would entail only four WLICs in the Eighth District which, in light of additional qualitative factors, was judged to be inappropriate. This analysis concludes that five construction tenders are required in D8.

Reducing the WLIC fleet by five would be achieved primarily through the transfer of approximately 1,400 of the 1,600 buoys worked by WLICs to seven replacement stern-loading buoy boats. In addition, other WLIC mission areas, including providing ATON support to other districts, non-ATON support to other Coast Guard missions, and the construction of docks and bulkheads for both the Coast Guard and other government agencies, would have to be curtailed.

A construction tender fleet dedicated to construction work would retain the ability to meet critical discrepancy response requirements, such as removing and rebuilding damaged structures posing hazards to navigation, and would preserve the Coast Guard career pipeline necessary to develop and maintain construction tender expertise and quality assurance.

Construction tenders fully employed doing construction work result in economies of scale due to the relatively fixed personnel and engineering costs associated with vessel operations. These economies of scale result in no apparent monetary advantage to be gained from contracting the work of construction tenders.

Following are summaries of the findings of this analysis.

6.1 District 5

DSS outputs for the Fifth District indicate that two WLICs -- one home ported at Baltimore and the other at Atlantic Beach, NC -- are capable of performing the construction work of the three current construction tenders. This finding was counter to what was expected based on reported Abstract of Operations underway hours for SLEDGE (Baltimore, MD), KENNEBEC (Portsmouth, VA), and PRIMROSE (Atlantic Beach, NC). Except for SLEDGE, the district's construction tenders are assigned little or no buoy work, so their AOPS hours should be almost entirely attributable to construction activities. The derived log file did not support that conclusion.

Discussions with the Fifth District revealed that the difference between the AOPS and DSS underway hours was primarily attributable to the number of structure upgrades performed in D5. In developing the derived log file, if an aid had been an "LT" (light structure) in the 1990 ATONIS aid file, and was still an "LT" in the 1993 version, then an upgrade during that time from a single-pile structure to a multi-pile structure would not have been captured. That the derived pilings total was only 64% of the district's reported total supports the conclusion that

the difference is attributable to structure upgrades.

If significant levels of additional structure upgrades are planned in the Fifth District, two construction tenders may not be adequate for the district's requirements. However, the ability to justify the need for a third construction tender based on structure upgrade requirements is not apparent. Upgrades can be planned out in advance and could be amenable to being performed under commercial contracts. The derived log file activities for the Fifth District already include the largest percentage (54%) and frequency (142 activities) of non-discrepancy work (establishments, conversions, and removals) of the three WLIC districts.

The Fifth District is subject to both hurricanes and severe winter icing that can cause significant damage to fixed aids. The possibility of such events occurring and the potential significance of the effects cannot be overlooked. However, it is not apparent that two construction tenders -- combined with additional resources from both within and outside the district -- could not satisfactorily respond to such events.

One replacement buoy boat is projected for D5 to offset the one-tender reduction in its WLIC fleet. Due to the large number of buoys (132) assigned to SLEDGE that can be worked by a buoy boat, the new buoy boat should be located in Baltimore. The geographic areas of coverage for the two projected D5 construction tenders are shown in Figure 4.

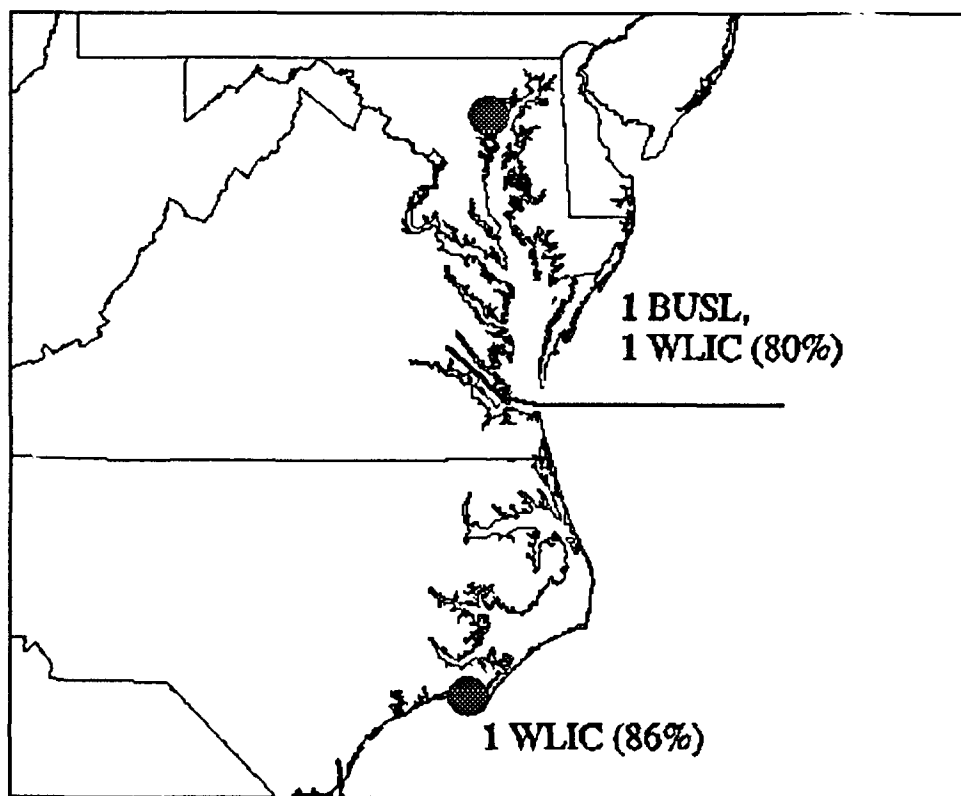


FIGURE 4. PROJECTED DISTRICT 5 WLICS (2)

6.2 District 7

DSS results for the Seventh District indicate that, due to the extensive operating areas of HUDSON (Miami, FL) and VISE (St. Petersburg, FL), no fleet reductions can be made at those locations.

However, DSS results for RAMBLER (Charleston, SC) and Group Mayport's SMILAX (Brunswick, GA) and HAMMER (Mayport, FL) indicate that two tenders could perform the construction work currently performed by those three tenders. The lowest utilization totals were reported when the two projected tenders are home ported in Charleston (48%) and Mayport (62%). Although both tenders would be relatively under utilized for construction work, DSS results showed that one tender working from the central Brunswick port would be 145% utilized.

Individually, among the 16 current construction tenders, the DSS reported the lowest (302) and third lowest (459) amounts of underway hours for the derived construction activities of SMILAX and RAMBLER, respectively. Conversely, SMILAX and RAMBLER show the highest (47) and third highest (16) totals of assigned buoys that cannot be worked by replacement buoy boats. It is projected that the two tenders replacing RAMBLER, SMILAX, and HAMMER will still have sufficient capacity to retain assignment of those buoys.

Despite the relatively low utilization amounts for the projected Charleston and Mayport tenders, the previous projection of one new buoy boat for Brunswick, which will no longer be home to a WLIC, is unchanged. This is based on the following considerations: the two construction tenders will still be assigned the non-BUSL buoys; currently, SMILAX reports the highest underway hours of the 16 WLICs -- a BUSL assigned to Brunswick will help offset the loss of those hours; and, anticipating assignment of the BUSL, the Coast Guard is preparing to convert a number of heavy-sinker buoys to smaller sinkers capable of being worked by a BUSL.

The buoy boats previously projected for Charleston and Miami, however, are no longer required. The WLICs projected for those locations will have sufficient capacity to meet existing buoy servicing requirements. The geographic areas of coverage for the four projected D7 construction tenders are shown in Figure 5.

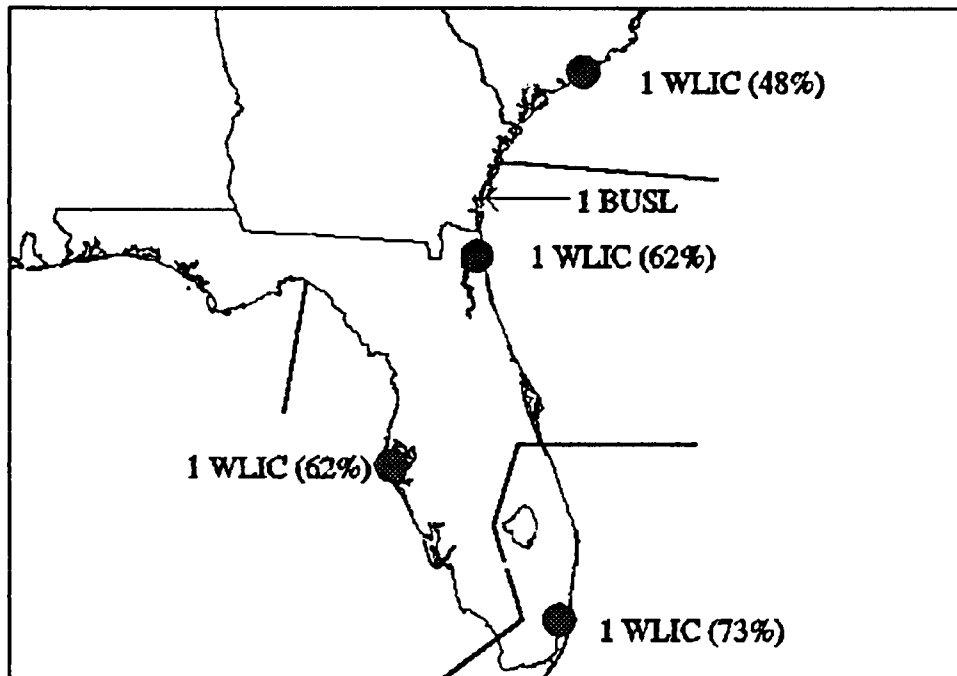


FIGURE 5. PROJECTED DISTRICT 7 WLICS (4)

6.3 District 8

The Eighth District's eight construction tenders are each assigned, on average, over 150 buoys. Off-loading those buoys onto replacement buoy boats significantly reduces demand on those tenders. DSS outputs for D8 indicate that one construction tender assigned to each of the district's four groups -- each of which currently have two WLICs -- would be capable of accomplishing the district's fixed aid construction requirements. Maintaining the current group boundaries, single WLICs at Corpus Christi, Galveston, New Orleans, and Mobile would operate at 74%, 102%, 94%, and 108% of underway hours capacity, respectively. By shifting group boundaries to take advantage of the available capacity at Corpus Christi, the utilization figures for all four groups can be brought to between 95% and 99%.

Additional considerations, including the WLIC qualitative factors identified in this analysis, indicate that reducing the D8 construction tender fleet to four is not advisable. Specifically, the following factors were considered:

- The derived log file represents an average year. Deploying four construction tenders at nearly 100% of their capacity allows little or no capacity for above-average annual workloads.
- Based on the derived log file, 83% of the construction activities performed by D8 WLICs are in response to discrepancies. This was the highest percentage of the three

districts (D7: 74%, D5: 46%). Areas where WLICs spend proportionately more time on discrepancy response requirements, as in D8, are more adversely affected by surge response and maintenance requirements. Compared to non-discrepancies, discrepancy response cannot be as easily deferred, and therefore cannot be as easily scheduled or rescheduled around maintenance and surge response requirements.

- The D8 ports of New Orleans, Port Arthur (TX), Houston/Galveston, Mobile, and Corpus Christi were five of the top six ports in the country identified for establishment or improvement of Vessel Traffic Systems⁸, offering an indication of the relative significance and state of the district's ports.

Accordingly, this analysis concludes that five construction tenders are required in the Eighth District. The choice of location for the fifth tender requires further inputs from the district. Geographically, New Orleans and Galveston are the middle two ports in the district and either one of them, or some point in between, could be an appropriate location. The area of Morgan City, LA, due to its central location within the district and therefore its relative proximity to each of the other four WLIC ports, might be an advantageous location for the fifth tender, subject to local considerations and district concerns.

Previously, six new buoy boats had been projected for D8. Based on the five projected tenders, the need for five of the six buoy boats still exists. The buoy boat projected for Galveston is now unnecessary due to the availability of a sufficient level of WLIC capacity from Galveston to perform the required buoy work⁹. The geographic areas of coverage for the five projected D8 construction tenders, with the fifth tender home ported in Morgan City, are shown in Figure 6.

⁸ U.S. Department of Transportation, U.S. Coast Guard, *Ports Needs Study (Vessel Traffic Services Benefits)*, DOT-1-CG-N-01-91-1.2, August, 1991.

⁹ The 1993 Volpe Center BUSL study projected 402 WLIC hours for the Galveston WLIC buoys.

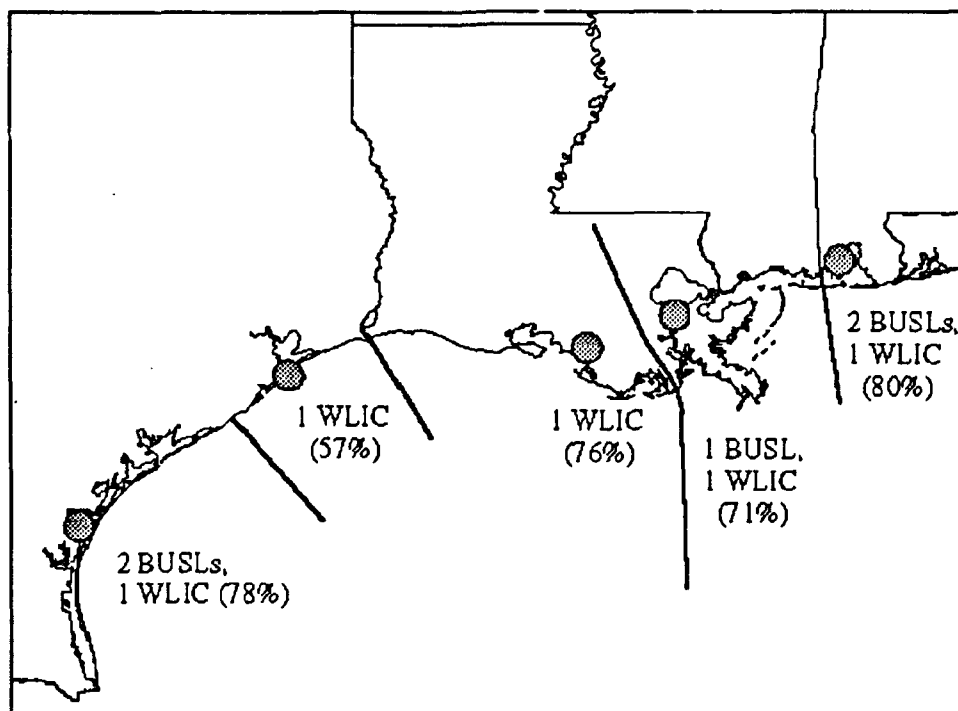


FIGURE 6. PROJECTED DISTRICT 8 WLICS (5)

6.4 Impact on Projected Replacement BUSL Requirements

The Volpe Center's August, 1993 analysis of Coast Guard BUSL requirements projected the need for 10 replacement BUSLs to perform the buoy work currently done by WLICs. However, the analysis also concluded that its findings were subject "to the follow-on WLIC mission analysis and fleet-sizing study. Both factors may contribute to a lowering of the projected number of replacement BUSLs." The BUSL analysis assumed a WLIC fleet with no available capacity for performing buoy work. Based on the results of this study, reducing the WLIC fleet size would still leave some capacity for some WLICs to perform buoy work. Having re-examined the requirements for replacement BUSLs, the BUSLs projected for Charleston, Miami, and Galveston are no longer required, resulting in a revised projection of 7 BUSLs for WLIC buoy work. Table 16 shows the revisions along with the number of buoys assigned to each WLIC that can be worked by BUSLs.

TABLE 16. REVISED REPLACEMENT BUSL PROJECTIONS FOR WLICs

Dis- trict	State	WLIC/City	Buoys BUSLs Can Work	Buoys BUSLs Can't Work	Previous BUSL Projection	Revised BUSL Projection
5	MD	SLEDGE/Baltimore	132	15	1	1
5	VA	KENNEBEC/Portsmouth	0	0	0	0
5	NC	PRIMROSE/Atlantic Beach	10	5	0	0
		District 5 Totals	142	20	1	1
7	SC	RAMBLER/Charleston	35	16	1	0
7	GA	SMILAX/Brunswick	23	47	1	1
7	FL	HAMMER/Mayport	8	0	0	0
7	FL	HUDSON/Miami	27	9	1	0
7	FL	WISE/St Petersburg	3	2	0	0
		District 7 Totals	96	74	3	1
8	AL	AXE/Mobile	317	4	2	2
8	AL	SAGINAW/Mobile	56	14		
8	LA	WEDGE/New Orleans	14	3	1	1
8	LA	PAMLICO/New Orleans	88	1		
8	TX	CLAMP/Galveston	119	24	1	0
8	TX	HATCHET/Galveston	129	4		
8	TX	ANVIL/Corpus Christi	216	1	2	2
8	TX	MALLET/Corpus Christi	283	0		
		District 8 Totals	1222	51	6	5
		Fleet Totals	1460	145	10	7

6.5 Comparison of WLIC and Private Sector Costs

The comparison of government and private sector costs contained in this analysis is intended to provide an indication of the relative costs. The results should not be interpreted as a complete study of all relevant factors -- such an analysis is not warranted at this time. Instead, the objective was to provide a basis for the formulation of future acquisition plans for replacing WLICs. If a complete analysis were warranted, representative private sector costs from the relevant geographic areas would need to be collected. In addition, a more precise delineation between construction versus non-construction WLIC costs would be warranted.

The results of the economic analysis indicate that private sector contract costs exceed those of Coast Guard construction tenders that are fully employed on construction activities. Of the total average annual WLIC operating cost of \$771,820, 56% is consumed on personnel, 27% on engineering, and only 17% on operations and maintenance. The relatively fixed personnel and engineering costs result in lower average unit costs as a tender's workload increases.

Accordingly, when capital replacement costs are included, an under utilized Coast Guard construction tender compares significantly less favorably against private sector costs than a fully utilized tender. This finding is consistent with the Coast Guard's use of contracted resources in districts where the level of construction activity does not warrant the assignment of WLICs.

6.6 Qualitative Mission Factors

A reduction in the Coast Guard's construction tender fleet will reduce the availability of WLICs for performing activities beyond their ATON construction mission. The effects would be most noticeable in the following areas: meeting surge response requirements; providing ATON support to other Coast Guard districts; covering for other tenders undergoing scheduled and unscheduled maintenance; providing non-ATON mission support to other Coast Guard missions; and providing non-ATON marine construction support to other Coast Guard and government organizations. To the extent that these activities are no longer performed by Coast Guard assets, the Coast Guard's visibility and associated public perception may be affected.

If private sector fixed aid construction costs were to compare favorably with Coast Guard construction tender costs, the following considerations should be included in the decision of whether to pursue the contracting option.

- The ability to shift contracted resources in response to both surge response and maintenance requirements may be more difficult with a contracted fleet than it is with Coast Guard assets.
- The Coast Guard districts to which WLICs are periodically loaned for the purpose of building fixed aids would have to pursue alternative means of building those aids.
- Alternatives would have to be found for performing the WLICs' buoy work, for building docks and bulkheads for other Coast Guard and government organizations, and for the support to other Coast Guard missions currently delivered by WLICs.
- If all fixed aid construction was contracted, the existing construction tender career pipeline, which produces Coast Guard personnel trained in both the aids to navigation mission and marine construction, would no longer exist. This would impact the ability to develop qualified personnel capable of assuring the quality performance of contracted fixed aid construction operations.
- Contractual specifications may inhibit the performance of discretionary preventive maintenance. In some cases, there might be a financial advantage to a contractor in foregoing preventive maintenance and waiting until an actual discrepancy occurs.
- Government reimbursement mechanisms may work counter to the requirements of an effective aids to navigation system. The receipt of prompt payments might be crucial to the ability of some contractors to maintain unbroken levels of service. Any problems experienced in receiving prompt payments might influence a contractor towards pursuing non-government opportunities that are financially more lucrative and timely during periods of high Coast Guard demand.

7 RECOMMENDATION

Construction tenders are essential to the successful performance of the aids to navigation systems in the areas in which they operate. WLICs provide the ability to quickly respond to and repair damaged structures which pose hazards to navigation. In addition, the ability to exercise judgment without regard for profits cannot be overlooked in assessing the value of WLICs.

This analysis recommends that, as the new BUSLs are brought into service and the oldest WLICs are retired, the Coast Guard begin a realignment of construction tender operating areas down to a configuration requiring 11 WLICs. From that point, the Coast Guard should pursue the acquisition of new WLICs to replace tenders retired thereafter.

The projected fleet size is based upon a derived log file that represents current activities. The fact that the log file was derived infers an obvious recommendation of this analysis: the work performed by Coast Guard ATON resources needs to be more accurately captured. The derived log file was judged to be an accurate depiction of construction tender activities. However, differences between the derived log file and reported Abstract of Operations utilization figures were apparent, as were differences between the derived log file and the three sets of actual compiled ship log data.

The Coast Guard is in the process of developing a new Aids to Navigation Information System which should cut down significantly on the data inconsistencies evident in the current version. However, at this time, no plans are in place for capturing the data appropriate to this analysis. At a minimum, this analysis recommends uniformly capturing the following data on all construction tender activities judged by the Coast Guard to be consistent with the mission of construction tenders:

- Date of activity;
- Description of activity;
- Aid number;
- Performing unit;
- Time spent on station; and
- Pilings utilized (if any).

For modeling purposes, assigning each activity to a corresponding tender trip number would be useful. The trip number could be a simple counter of each time the tender got underway from its home port.

Maintaining accurate, complete, and uniform data on construction activities, and on all other ATON servicing activities, would provide the Coast Guard with benefits beyond the requirements of this analysis. The ability to identify patterns and trends in aid servicing requirements by aid number, type, waterway, environment, and servicing unit would aid in the allocation of current resources, and would provide a basis for developing the justification for additional required resources.

Furthermore, as federal agencies are faced with greater demands on limited resources, measuring and ensuring *effectiveness* becomes increasingly important. Measuring effectiveness is often not a simple task, but it is unduly complicated by the absence of a clear definition of goals and objectives and associated performance and cost data. The effectiveness of an aids to navigation system requires a determination of benefits and costs, and costs need to be allocated to cost elements. Based on the data available to this analysis, such an allocation would be difficult for construction tender activities.

Capturing and compiling data related to performance and effectiveness will also provide a more accurate basis from which to consider contracting options. This analysis recommends that contracting options be investigated for only those situations where required construction levels are not sufficient to keep a construction tender fully employed on construction activities. This includes both areas where no WLICs are warranted and those where WLICs are warranted but more than a whole number of tenders is called for. In the latter case, contracting the non-discrepancy work that can be planned in advance would offer cost advantages over partially utilizing Coast Guard assets for those purposes. On the basis of average unit costs, private sector costs compare favorably with those of under utilized tenders.

APPENDIX A

WLIC OPERATIONS QUESTIONNAIRE

WLIC OPERATIONS QUESTIONNAIRE

Unit Name: _____

Phone: _____

1. What is your vessel's average transit speed?* _____ Kt
 *Average transit speed should be lower than cruising speed, since it includes slowing while approaching an aid station, mooring maneuvers, current affects, and no wake zones. Maneuvering to find the aid position, and dragging for wreckage should be counted as a part of servicing time.

2. Does your unit routinely work aids at night? YES / NO

3. Do you routinely transit between work areas at night? YES / NO

4. If the answer to 3 is no, are nights away from home port generally reported in the Abstracts as: UW / STANDBY

5. Many aids are repaired when a problem becomes apparent, but before there is a reported discrepancy. What percentage of your construction is for reported discrepancies? _____ %

6. Please enter the average times it takes for your unit to complete the following services. Include time to sweep for old structures if appropriate. This average should consider varying water depths, aid characteristics and requirements, bottom types, and other conditions throughout your AOR.

Aid Type	New Construct	Recover & Rebuild	Remove & Replace	Minor Repairs
Wood Daybeacon	_____	_____	_____	_____
Steel Daybeacon	_____	_____	_____	_____
Wood Single Pile Lt	_____	_____	_____	_____
Steel Single Pile Lt	_____	_____	_____	_____
Wood 3 Pile Light	_____	_____	_____	_____
Steel 3 Pile Light	_____	_____	_____	_____
Wood 4 Pile Light	_____	_____	_____	_____
Steel 4 Pile Light	_____	_____	_____	_____
4 Pile Range Wood	_____	_____	_____	_____
4 Pile Range Steel	_____	_____	_____	_____

Aid Type	New Construct	Recover & Rebuild	Remove & Replace	Minor Repairs
8 Pile Range Wood	_____	_____	_____	_____
8 Pile Range Steel	_____	_____	_____	_____
12 Pile Range Wood	_____	_____	_____	_____
12 Pile Range Steel	_____	_____	_____	_____

7. Can all the aids you build be classified reasonably well in the above categories? YES / NO

8. If no, what categories are missing? _____

9. Estimate the average time for scheduled services to aids for which you are assigned as primary unit. Leave blank if no aids of that type are assigned, or if these services are normally performed by small boat and do not affect ioperating hours. The following appreviations are used:

I = Annual Inspection
 B = Dayboard Change (includes Annual Inspection)
 C = Recharge (includes Annual Inspection)
 M = Mooring Service (includes Annual Inspection)
 P = Position Check
 R = Buoy Relief

Aid Type	I	B	C	M	P	R
ULB	_____	<u>N/A</u>	<u>N/A</u>	_____	_____	_____
LB	_____	<u>N/A</u>	_____	_____	_____	_____
DBN	_____	_____	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
LT	_____	_____	_____	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
SM Range	_____	_____	_____	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
LG Range	_____	_____	_____	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>

10. Are there significant operations which are recorded as ATON employment which are not identified above? (Specify)

11. Given that the personnel and boats are available, can portions of your mission be performed by other standard CG ATON resources? What portions of your mission cannot be performed by any other resource? (specify)

12. Estimate the total number of piles you can carry for construction. Assume that you are not carrying buoy tending materials.

Wood: _____ Steel: _____

13. Are there any other factors which limit the number of aids you can build before returning to home port:

APPENDIX B

WLIC SERVICE TIMES

	Dis- trict	Vessel Name	Code	in Hours	Description*	Service Time
1	5	Fleet Average	11	00.61	1ADBNew Con	
2	5	Fleet Average	12	01.28	1ADBNew/Reb	
3	5	Fleet Average	13	01.25	1ADBNew/Repl	
4	5	Fleet Average	13-R	00.25	1ADBNew	
5	5	Fleet Average	14	00.29	1ADBNew in Repl	
6	5	Fleet Average	21	01.00	1ADBNew Con	
7	5	Fleet Average	22	02.00	1ADBNew/Reb	
8	5	Fleet Average	23	02.83	1ADBNew/Repl	
9	5	Fleet Average	23-R	01.33	1ADBNew	
10	5	Fleet Average	24	00.40	1ADBNew in Repl	
11	5	Fleet Average	31	01.33	1ADBNew Con	
12	5	Fleet Average	32	01.50	1ADBNew/Reb	
13	5	Fleet Average	33	02.08	1ADBNew/Repl	
14	5	Fleet Average	33-R	00.58	1ADBNew	
15	5	Fleet Average	34	00.58	1ADBNew in Repl	
16	5	Fleet Average	41	02.00	1ADBNew Con	
17	5	Fleet Average	42	02.75	1ADBNew/Reb	
18	5	Fleet Average	43	03.50	1ADBNew/Repl	
19	5	Fleet Average	43-R	01.67	1ADBNew	
20	5	Fleet Average	44	00.67	1ADBNew in Repl	
21	5	Fleet Average	51	03.67	3ALNew Con	
22	5	Fleet Average	52	05.33	3ALNew/Reb	
23	5	Fleet Average	53	05.67	3ALNew/Repl	
24	5	Fleet Average	53-R	02.00	3ALNew	
25	5	Fleet Average	54	00.75	3ALNew in Repl	
26	5	Fleet Average	61	04.00	3SLNew Con	
27	5	Fleet Average	62	05.00	3SLNew/Reb	
28	5	Fleet Average	63	05.00	3SLNew/Repl	
29	5	Fleet Average	64	00.88	3SLNew in Repl	
30	5	Fleet Average	71	04.50	4ALNew Con	
31	5	Fleet Average	72	05.50	4ALNew/Reb	
32	5	Fleet Average	73	06.00	4ALNew/Repl	
33	5	Fleet Average	73-R	02.00	4ALNew	
34	5	Fleet Average	74	00.88	4ALNew in Repl	
35	5	Fleet Average	81	07.00	4SLNew Con	
36	5	Fleet Average	82	10.50	4SLNew/Reb	
37	5	Fleet Average	83	10.00	4SLNew/Repl	
38	5	Fleet Average	84	01.50	4SLNew in Repl	
39	5	Fleet Average	91	28.33	4ALNew Con	
40	5	Fleet Average	92	34.00	4ALNew/Reb	
41	5	Fleet Average	93	41.67	4ALNew/Repl	
42	5	Fleet Average	93-R	24.00	4ALNew	
43	5	Fleet Average	94	01.67	4ALNew in Repl	
44	5	Fleet Average	F5	00.75	Inspect	
45	5	Fleet Average	F8	01.02	Mooring	
46	5	Fleet Average	F9	00.40	Pos Check	
47	5	Fleet Average	FA	00.65	Relief	
48	5	Fleet Average	G5	00.75	Inspect	
49	5	Fleet Average	G7	01.35	Recharge	

	Dis- trict	Vessel Name	Code	in Hours	Description*	Service Time
50	5	Fleet Average	G8	00.97	Mooring	
51	5	Fleet Average	G9	00.40	Pos Check	
52	5	Fleet Average	GA	00.65	Relief	
53	5	Fleet Average	L1	00.33	1ADBNew Con	
54	5	Fleet Average	L2	00.75	1ADBNew/Reb	
55	5	Fleet Average	L3	02.38	1ADBNew/Repl	
56	5	Fleet Average	L3-R	00.79	1ADBNew	
57	5	Fleet Average	L4	00.34	1ADBNew in Repl	
58	5	Fleet Average	M1	01.00	1ALTNew Con	
59	5	Fleet Average	M2	01.50	1ALTNew/Reb	
60	5	Fleet Average	M3	03.38	1ALTNew/Repl	
61	5	Fleet Average	M3-R	01.13	1ALTNew	
62	5	Fleet Average	M4	00.38	1ALTNew in Repl	
63	5	Fleet Average	O1	02.50	2ALTNew Con	
64	5	Fleet Average	O2	03.25	2ALTNew/Reb	
65	5	Fleet Average	O3	04.44	2ALTNew/Repl	
66	5	Fleet Average	O3-R	01.48	2ALTNew	
67	5	Fleet Average	O4	00.56	2ALTNew in Repl	
68	5	Fleet Average	P3	05.00	2SLNew/Repl	
69	5	Fleet Average	P3-R	01.67	2SLNew	
70	5	Fleet Average	P4	00.63	2SLNew in Repl	
71	5	Fleet Average	Q1	02.50	2ULTNew Con	
72	5	Fleet Average	Q2	03.25	2ULTNew/Reb	
73	5	Fleet Average	Q3	03.88	2ULTNew/Repl	
74	5	Fleet Average	Q3-R	01.29	2ULTNew	
75	5	Fleet Average	Q4	00.50	2ULTNew in Repl	
76	5	Fleet Average	R1	04.00	3ALTNew Con	
77	5	Fleet Average	R2	05.00	3ALTNew/Reb	
78	5	Fleet Average	R3	06.00	3ALTNew/Repl	
79	5	Fleet Average	R3-R	02.00	3ALTNew	
80	5	Fleet Average	R4	00.75	3ALTNew in Repl	
81	5	Fleet Average	S1	26.00	4ALTNew Con	
82	5	Fleet Average	S2	26.50	4ALTNew/Reb	
83	5	Fleet Average	S3	39.00	4ALTNew/Repl	
84	5	Fleet Average	S3-R	13.00	4ALTNew	
85	5	Fleet Average	S4	00.88	4ALTNew in Repl	
86	5	Fleet Average	U4	00.34	0ADBNew in Repl	
87	5	Fleet Average	V4	00.38	0ALTNew in Repl	
88	5	Fleet Average	W4	00.50	0SLTNew in Repl	
89	5	Fleet Average	Y1	10.00	4SLTNew Con	
90	5	Fleet Average	Y2	13.50	4SLTNew/Reb	
91	5	Fleet Average	Y3	13.00	4SLTNew/Repl	
92	5	Fleet Average	Y4	02.00	4SLTNew	
93	5	KENNEBEC	11	01.00	1ADBNew Con	
94	5	KENNEBEC	12	02.00	1ADBNew/Reb	
95	5	KENNEBEC	13	02.00	1ADBNew/Repl	
96	5	KENNEBEC	14	00.50	1ADBNew in Repl	
97	5	KENNEBEC	21	01.50	1SDBNew Con	
98	5	KENNEBEC	22	03.00	1SDBNew/Reb	

	Dis- trict	Vessel Name	Code	In Hours	Description*	Service Time
99	5	KENNEBEC	23	03.00	1SDBNRem/Repl	
100	5	KENNEBEC	24	00.50	1SDBNMin Repl	
101	5	KENNEBEC	31	02.00	1ALNew Con	
102	5	KENNEBEC	32	02.00	1ALTRem/Reb	
103	5	KENNEBEC	33	02.50	1ALTRem/Repl	
104	5	KENNEBEC	34	01.00	1ALTRem Repl	
105	5	KENNEBEC	41	02.50	1SLTRem Con	
106	5	KENNEBEC	42	03.50	1SLTRem/Reb	
107	5	KENNEBEC	43	03.50	1SLTRem/Repl	
108	5	KENNEBEC	44	01.00	1SLTRem Repl	
109	5	KENNEBEC	51	05.00	3ALTRem Con	
110	5	KENNEBEC	52	08.00	3ALTRem/Reb	
111	5	KENNEBEC	53	08.00	3ALTRem/Repl	
112	5	KENNEBEC	54	01.00	3ALTRem Repl	
113	5	KENNEBEC	81	08.00	4SLTRem Con	
114	5	KENNEBEC	82	14.00	4SLTRem/Reb	
115	5	KENNEBEC	83	14.00	4SLTRem/Repl	
116	5	KENNEBEC	84	02.00	4SLTRem Repl	
117	5	KENNEBEC	91	32.00	4ALTRem Con	
118	5	KENNEBEC	92	48.00	4ALTRem/Reb	
119	5	KENNEBEC	93	48.00	4ALTRem/Repl	
120	5	KENNEBEC	94	03.00	4ALTRem Repl	
121	5	KENNEBEC	Y1	14.00	4SLTRem Con	
122	5	KENNEBEC	Y2	20.00	4SLTRem/Reb	
123	5	KENNEBEC	Y3	20.00	4SLTRem/Repl	
124	5	KENNEBEC	Y4	03.00	4SLTRem Repl	
125	5	PRIMROSE	11	00.33	1ADBNNew Con	
126	5	PRIMROSE	12	00.75	1ADBNRem/Reb	
127	5	PRIMROSE	13	00.75	1ADBNRem/Repl	
128	5	PRIMROSE	13-R	00.25	1ADBNRem Repl	
129	5	PRIMROSE	14	00.17	1ADBNMin Repl	
130	5	PRIMROSE	23	04.00	1SDBNRem/Repl	
131	5	PRIMROSE	23-R	01.33	1SDBNRem Repl	
132	5	PRIMROSE	24	00.50	1ALTRem Con	
133	5	PRIMROSE	31	01.00	1ALTRem/Reb	
134	5	PRIMROSE	32	01.50	1ALTRem/Repl	
135	5	PRIMROSE	33	01.75	1ALTRem Repl	
136	5	PRIMROSE	33-R	00.58	1ALTRem Repl	
137	5	PRIMROSE	34	00.25	1ALTRem Repl	
138	5	PRIMROSE	43	05.00	1SLTRem/Repl	
139	5	PRIMROSE	43-R	01.67	1SLTRem Repl	
140	5	PRIMROSE	44	00.50	1SLTRem Repl	
141	5	PRIMROSE	51	04.00	3ALTRem Con	
142	5	PRIMROSE	52	05.00	3ALTRem/Reb	
143	5	PRIMROSE	53	06.00	3ALTRem/Repl	
144	5	PRIMROSE	53-R	02.00	3ALTRem Repl	
145	5	PRIMROSE	54	00.75	3ALTRem Repl	
146	5	PRIMROSE	64	00.75	3SLTRem Repl	
147	5	PRIMROSE	71	04.00	4ALTRem Con	

	Dis- trict	Vessel Name	Code	In Hours	Description*	Service Time
148	5	PRIMROSE	72	05.00	4ALTRem/Reb	
149	5	PRIMROSE	73	06.00	4ALTRem/Repl	
150	5	PRIMROSE	73-R	02.00	4ALTRem Repl	
151	5	PRIMROSE	74	00.75	4ALTRem Repl	
152	5	PRIMROSE	91	48.00	4ALTRem Con	
153	5	PRIMROSE	92	48.00	4ALTRem/Reb	
154	5	PRIMROSE	93	72.00	4ALTRem/Repl	
155	5	PRIMROSE	93-R	24.00	4ALTRem Repl	
156	5	PRIMROSE	94	01.00	4ALTRem Repl	
157	5	PRIMROSE	F5	01.00	Inspect	
158	5	PRIMROSE	F8	01.33	Mooring	
159	5	PRIMROSE	F9	00.50	Pos Check	
160	5	PRIMROSE	FA	01.00	Relief	
161	5	PRIMROSE	G5	01.00	Inspect	
162	5	PRIMROSE	G7	02.00	Recharge	
163	5	PRIMROSE	G8	01.33	Mooring	
164	5	PRIMROSE	G9	00.50	Pos Check	
165	5	PRIMROSE	GA	01.00	Relief	
166	5	PRIMROSE	L1	00.33	1ADBNNew Con	
167	5	PRIMROSE	L2	00.75	1ADBNRem/Reb	
168	5	PRIMROSE	L3	02.38	1ADBNRem/Repl	
169	5	PRIMROSE	L3-R	00.79	1ADBNRem Repl	
170	5	PRIMROSE	L4	00.34	1ADBNMin Repl	
171	5	PRIMROSE	M1	01.00	1ALTRem Con	
172	5	PRIMROSE	M2	01.50	1ALTRem/Reb	
173	5	PRIMROSE	M3	03.38	1ALTRem/Repl	
174	5	PRIMROSE	M3-R	01.13	1ALTRem Repl	
175	5	PRIMROSE	M4	00.38	1ALTRem Repl	
176	5	PRIMROSE	O1	02.50	2ALTRem Con	
177	5	PRIMROSE	O2	03.25	2ALTRem/Reb	
178	5	PRIMROSE	O3	04.44	2ALTRem/Repl	
179	5	PRIMROSE	O3-R	01.48	2ALTRem Repl	
180	5	PRIMROSE	O4	00.56	2ALTRem Repl	
181	5	PRIMROSE	P3	05.00	2SLTRem/Repl	
182	5	PRIMROSE	P3-R	01.67	2SLTRem Repl	
183	5	PRIMROSE	P4	00.63	2SLTRem Repl	
184	5	PRIMROSE	Q1	02.50	2ALTRem Con	
185	5	PRIMROSE	Q2	03.25	2ALTRem/Reb	
186	5	PRIMROSE	Q3	03.88	2ALTRem/Repl	
187	5	PRIMROSE	Q3-R	01.29	2ALTRem Repl	
188	5	PRIMROSE	Q4	00.50	2ALTRem Repl	
189	5	PRIMROSE	R1	04.00	3ALTRem Con	
190	5	PRIMROSE	R2	05.00	3ALTRem/Reb	
191	5	PRIMROSE	R3	06.00	3ALTRem/Repl	
192	5	PRIMROSE	R3-R	02.00	3ALTRem Repl	
193	5	PRIMROSE	R4	00.75	3ALTRem Repl	
194	5	PRIMROSE	S1	26.00	4ALTRem Con	
195	5	PRIMROSE	S2	26.50	4ALTRem/Reb	
196	5	PRIMROSE	S3	39.00	4ALTRem/Repl	

Dis- trict	Vessel Name	Code	In Hours	Description*	Service Time
197	5 PRIMROSE	S3-R	13.00	4ALTRemove	
198	5 PRIMROSE	S4	00.88	4ALThIn Reps	
199	5 PRIMROSE	U4	00.34	1DOBHMin Reps	
200	5 PRIMROSE	V4	00.38	0ALThIn Reps	
201	5 SLEDGE	11	00.50	1DOBHNew Con	
202	5 SLEDGE	12	01.10	1DOBHRec/Reb	
203	5 SLEDGE	13	01.00	1DOBHRem/Repl	
204	5 SLEDGE	14	00.20	1DOBHMin Reps	
205	5 SLEDGE	21	00.50	1DOBHNew Con	
206	5 SLEDGE	22	01.00	1DOBHRec/Reb	
207	5 SLEDGE	23	01.50	1DOBHRem/Repl	
208	5 SLEDGE	24	00.20	1DOBHMin Reps	
209	5 SLEDGE	31	01.00	1ULThNew Con	
210	5 SLEDGE	32	01.00	1ULThRec/Reb	
211	5 SLEDGE	33	02.00	1ULThRem/Repl	
212	5 SLEDGE	34	00.50	1ULThMin Reps	
213	5 SLEDGE	41	01.50	1SLThNew Con	
214	5 SLEDGE	42	02.00	1SLThRec/Reb	
215	5 SLEDGE	43	02.00	1SLThRem/Repl	
216	5 SLEDGE	44	00.50	1SLThMin Reps	
217	5 SLEDGE	51	02.00	3MLThNew Con	
218	5 SLEDGE	52	03.00	3MLThRec/Reb	
219	5 SLEDGE	53	03.00	3MLThRem/Repl	
220	5 SLEDGE	54	00.50	3MLThMin Reps	
221	5 SLEDGE	61	04.00	3SLThNew Con	
222	5 SLEDGE	62	05.00	3SLThRec/Reb	
223	5 SLEDGE	63	05.00	3SLThRem/Repl	
224	5 SLEDGE	64	01.00	3SLThMin Reps	
225	5 SLEDGE	71	05.00	4ULThNew Con	
226	5 SLEDGE	72	06.00	4ULThRec/Reb	
227	5 SLEDGE	73	06.00	4ULThRem/Repl	
228	5 SLEDGE	74	01.00	4ULThMin Reps	
229	5 SLEDGE	81	06.00	4SLThNew Con	
230	5 SLEDGE	82	07.00	4SLThRec/Reb	
231	5 SLEDGE	83	06.00	4SLThRem/Repl	
232	5 SLEDGE	84	01.00	4SLThMin Reps	
233	5 SLEDGE	91	05.00	4MLThNew Con	
234	5 SLEDGE	92	06.00	4MLThRec/Reb	
235	5 SLEDGE	93	05.00	4MLThRem/Repl	
236	5 SLEDGE	94	01.00	4MLThMin Reps	
237	5 SLEDGE	F5	00.50	Inspect	
238	5 SLEDGE	F8	00.70	Mooring	
239	5 SLEDGE	F9	00.30	Pos Check	
240	5 SLEDGE	FA	00.30	Relief	
241	5 SLEDGE	GA	00.50	Inspect	
242	5 SLEDGE	G7	00.70	Recharge	
243	5 SLEDGE	G8	00.60	Mooring	
244	5 SLEDGE	G9	00.30	Pos Check	
245	5 SLEDGE	GA	00.30	Relief	

Dis- trict	Vessel Name	Code	In Hours	Description*	Service Time
246	5 SLEDGE	U4	00.50	0SLThMin Reps	
247	5 SLEDGE	V1	06.00	4SLThNew Con	
248	5 SLEDGE	Y2	07.00	4SLThRec/Reb	
249	5 SLEDGE	Y3	06.00	4SLThRem/Repl	
250	5 SLEDGE	Y4	01.00	4SLThMin Reps	
251	7 Fleet Average	11	00.93	1DOBHNew Con	
252	7 Fleet Average	12	01.72	1DOBHRec/Reb	
253	7 Fleet Average	13	01.23	1DOBHRem/Repl	
254	7 Fleet Average	13-R	00.41	1DOBHRemove	
255	7 Fleet Average	14	00.25	1DOBHMin Reps	
256	7 Fleet Average	21	00.95	1DOBHNew Con	
257	7 Fleet Average	22	01.98	1DOBHRec/Reb	
258	7 Fleet Average	23	01.81	1DOBHRem/Repl	
259	7 Fleet Average	23-R	00.60	1DOBHRemove	
260	7 Fleet Average	24	00.46	1DOBHMin Reps	
261	7 Fleet Average	31	01.69	1ULThNew Con	
262	7 Fleet Average	32	02.69	1ULThRec/Reb	
263	7 Fleet Average	33	02.69	1ULThRem/Repl	
264	7 Fleet Average	33-R	00.90	1ULThRemove	
265	7 Fleet Average	34	00.60	1ULThMin Reps	
266	7 Fleet Average	41	01.50	1SLThNew Con	
267	7 Fleet Average	42	03.07	1SLThRec/Reb	
268	7 Fleet Average	43	03.07	1SLThRem/Repl	
269	7 Fleet Average	43-R	01.02	1SLThRemove	
270	7 Fleet Average	44	00.74	1SLThMin Reps	
271	7 Fleet Average	51	02.81	3ULThNew Con	
272	7 Fleet Average	52	03.80	3ULThRec/Reb	
273	7 Fleet Average	53	04.00	3ULThRem/Repl	
274	7 Fleet Average	53-R	01.33	3ULThRemove	
275	7 Fleet Average	54	00.85	3ULThMin Reps	
276	7 Fleet Average	61	06.70	3SLThNew Con	
277	7 Fleet Average	63	08.90	3SLThRem/Repl	
278	7 Fleet Average	63-R	02.97	3SLThRemove	
279	7 Fleet Average	64	01.60	3SLThMin Reps	
280	7 Fleet Average	71	14.38	4ULThNew Con	
281	7 Fleet Average	72	18.25	4ULThRec/Reb	
282	7 Fleet Average	73	18.25	4ULThRem/Repl	
283	7 Fleet Average	73-R	06.08	4ULThRemove	
284	7 Fleet Average	74	02.53	4ULThMin Reps	
285	7 Fleet Average	81	08.00	4SLThNew Con	
286	7 Fleet Average	82	12.50	4SLThRec/Reb	
287	7 Fleet Average	83	12.00	4SLThRem/Repl	
288	7 Fleet Average	83-R	04.00	4SLThRemove	
289	7 Fleet Average	84	02.73	4SLThMin Reps	
290	7 Fleet Average	91	19.00	4ULThNew Con	
291	7 Fleet Average	92	23.88	4ULThRec/Reb	
292	7 Fleet Average	93	24.38	4ULThRem/Repl	
293	7 Fleet Average	93-R	08.13	4ULThRemove	
294	7 Fleet Average	94	02.88	4ULThMin Reps	

	Dis- trict	Vessel Name	Code	In Hours	Service Time	Description*
295	7	Fleet Average	A3-R	07.67	4SLRemove	
296	7	Fleet Average	F5	00.87	Inspect	
297	7	Fleet Average	F8	01.09	Mooring	
298	7	Fleet Average	F9	00.24	Pos Check	
299	7	Fleet Average	FA	00.94	Relief	
300	7	Fleet Average	G5	01.00	Inspect	
301	7	Fleet Average	G7	01.50	Recharge	
302	7	Fleet Average	G8	01.30	Mooring	
303	7	Fleet Average	G9	00.25	Pos Check	
304	7	Fleet Average	GA	01.10	Relief	
305	7	Fleet Average	H5	00.17	DBNInspect	
306	7	Fleet Average	H6	00.17	DBNdayBrd Ch	
307	7	Fleet Average	J5	01.00	LTInspect	
308	7	Fleet Average	J6	02.00	LTdayBrd Ch	
309	7	Fleet Average	K5	01.00	LTInspect	
310	7	Fleet Average	K6	02.50	LTdayBrd Ch	
311	7	Fleet Average	L1	00.95	1ADBNew Con	
312	7	Fleet Average	L2	01.86	1ADBNew Rec/Reb	
313	7	Fleet Average	L3	01.49	1ADBNew Rec/Repl	
314	7	Fleet Average	L3-R	00.50	1ADBNew Remove	
315	7	Fleet Average	L4	00.35	1ADBNHn Reps	
316	7	Fleet Average	M1	01.70	1ALTNew Con	
317	7	Fleet Average	M2	02.97	1ALTRec/Reb	
318	7	Fleet Average	M3	03.02	1ALTRec/Repl	
319	7	Fleet Average	M3-R	01.01	1ALTRemove	
320	7	Fleet Average	M4	00.69	1ALThn Reps	
321	7	Fleet Average	O1	02.52	2ALTNew Con	
322	7	Fleet Average	O2	03.29	2ALTRec/Reb	
323	7	Fleet Average	O3	03.90	2ALTRec/Repl	
324	7	Fleet Average	O3-R	01.30	2ALTRemove	
325	7	Fleet Average	O4	00.94	2ALThn Reps	
326	7	Fleet Average	P1	02.33	2SLThn Con	
327	7	Fleet Average	P2	03.07	2SLThn Rec/Reb	
328	7	Fleet Average	P3	04.02	2SLThn Rec/Repl	
329	7	Fleet Average	P3-R	01.34	2SLThn Remove	
330	7	Fleet Average	P4	00.94	2SLThn Reps	
331	7	Fleet Average	Q1	02.25	2ULThn Con	
332	7	Fleet Average	Q2	03.25	2ULThn Rec/Reb	
333	7	Fleet Average	Q3	03.34	2ULThn Rec/Repl	
334	7	Fleet Average	Q3-R	01.11	2ULThn Remove	
335	7	Fleet Average	Q4	00.73	2ULThn Reps	
336	7	Fleet Average	R1	03.59	3ALTNew Con	
337	7	Fleet Average	R2	03.80	3ALTRec/Reb	
338	7	Fleet Average	R3	04.98	3ALTRec/Repl	
339	7	Fleet Average	R3-R	01.66	3ALTRemove	
340	7	Fleet Average	R4	01.24	3ALThn Reps	
341	7	Fleet Average	S1	16.85	4ALTNew Con	
342	7	Fleet Average	S2	22.01	4ALTRec/Reb	
343	7	Fleet Average	S3	22.09	4ALTRec/Repl	

	Dis- trict	Vessel Name	Code	In Hours	Service Time	Description*
344	7	Fleet Average	S3-R	07.36	4ALTRemove	
345	7	Fleet Average	S4	02.70	4ALThn Reps	
346	7	Fleet Average	T1	72.00	8ALTNew Con	
347	7	Fleet Average	T2	96.00	8ALTRec/Reb	
348	7	Fleet Average	T3	84.00	8ALTRec/Repl	
349	7	Fleet Average	T3-R	28.00	8ALTRemove	
350	7	Fleet Average	T4	04.00	8ALThn Reps	
351	7	Fleet Average	U4	00.35	OADBNHn Reps	
352	7	Fleet Average	V4	00.69	OADBNHn Reps	
353	7	Fleet Average	W4	00.50	OSLThn Reps	
354	7	Fleet Average	X1	72.00	8ULThn Con	
355	7	Fleet Average	X2	96.00	8ULThn Rec/Reb	
356	7	Fleet Average	X3	84.00	8ULThn Rec/Repl	
357	7	Fleet Average	X3-R	28.00	8ULThn Remove	
358	7	Fleet Average	X4	04.00	8ULThn Reps	
359	7	Fleet Average	Y2	23.00	4SLThn Rec/Reb	
360	7	Fleet Average	Y3	23.00	4SLThn Rec/Repl	
361	7	Fleet Average	Y4	03.00	4SLThn Reps	
362	7	Fleet Average	Y4	00.60	1ADBNew Con	
363	7	Fleet Average	Y4	00.80	1ADBNew Rec/Reb	
364	7	Fleet Average	Y4	01.25	1ADBNew Rec/Repl	
365	7	Fleet Average	Y4	00.42	1ADBNew Remove	
366	7	Fleet Average	Y4	00.20	1ADBNew Reps	
367	7	Fleet Average	Y4	00.60	1ADBNew Con	
368	7	Fleet Average	Y4	01.25	1ADBNew Rec/Reb	
369	7	Fleet Average	Y4	01.25	1ADBNew Rec/Repl	
370	7	Fleet Average	Y4	00.42	1ADBNew Remove	
371	7	Fleet Average	Y4	00.20	1ADBNew Reps	
372	7	Fleet Average	Y4	01.25	1ULThn Con	
373	7	Fleet Average	Y4	01.25	1ULThn Rec/Reb	
374	7	Fleet Average	Y4	01.75	1ULThn Rec/Repl	
375	7	Fleet Average	Y4	00.58	1ULThn Remove	
376	7	Fleet Average	Y4	00.40	1ULThn Reps	
377	7	Fleet Average	Y4	01.25	1SLThn Con	
378	7	Fleet Average	Y4	02.50	1SLThn Rec/Reb	
379	7	Fleet Average	Y4	02.50	1SLThn Rec/Repl	
380	7	Fleet Average	Y4	00.83	1SLThn Remove	
381	7	Fleet Average	Y4	00.40	1SLThn Reps	
382	7	Fleet Average	Y4	02.75	3ULThn Con	
383	7	Fleet Average	Y4	03.50	3ULThn Rec/Reb	
384	7	Fleet Average	Y4	03.50	3ULThn Rec/Repl	
385	7	Fleet Average	Y4	01.17	3ULThn Remove	
386	7	Fleet Average	Y4	00.40	3ULThn Reps	
387	7	Fleet Average	Y4	03.50	4ULThn Con	
388	7	Fleet Average	Y4	04.50	4ULThn Rec/Reb	
389	7	Fleet Average	Y4	04.50	4ULThn Rec/Repl	
390	7	Fleet Average	Y4	01.50	4ULThn Remove	
391	7	Fleet Average	Y4	00.60	4ULThn Reps	
392	7	Fleet Average	Y4	09.00	4SLThn Rec/Reb	

	Dis- trict	Vessel Name	Code	in Hours	Description*	Service Time
393	7	HAMMER	83	09.00	4SLTRem/Repl	
394	7	HAMMER	83-R	03.00	4SLTRemove	
395	7	HAMMER	84	01.25	4SLTMin Repl	
396	7	HAMMER	91	18.00	4SLTNew Con	
397	7	HAMMER	92	23.00	4SLTRec/Reb	
398	7	HAMMER	93	23.00	4SLTRem/Repl	
399	7	HAMMER	93-R	07.67	4SLTRemove	
400	7	HAMMER	94	01.50	4SLTMin Repl	
401	7	HAMMER	A3-R	07.67	4SLTRemove	
402	7	HAMMER	F5	00.60	Inspect	
403	7	HAMMER	F8	00.75	Mooring	
404	7	HAMMER	F9	00.25	Pos Check	
405	7	HAMMER	FA	01.25	Relief	
406	7	HAMMER	L1	00.60	1ADBNNew Con	
407	7	HAMMER	L2	01.03	1ADBNRec/Reb	
408	7	HAMMER	L3	01.25	1ADBNRem/Repl	
409	7	HAMMER	L3-R	00.42	1ADBNRemove	
410	7	HAMMER	L4	00.20	1ADBNMin Repl	
411	7	HAMMER	M1	01.25	1ALTNew Con	
412	7	HAMMER	M2	01.88	1ALTRec/Reb	
413	7	HAMMER	M3	02.13	1ALTRem/Repl	
414	7	HAMMER	M3-R	00.71	1ALTRemove	
415	7	HAMMER	M4	00.40	1ALTMIn Repl	
416	7	HAMMER	O1	01.63	2ALTNw Con	
417	7	HAMMER	O2	02.44	2ALTRec/Reb	
418	7	HAMMER	O3	02.56	2ALTRem/Repl	
419	7	HAMMER	O3-R	00.85	2ALTRemove	
420	7	HAMMER	O4	00.40	2ALTMIn Repl	
421	7	HAMMER	P1	01.25	2SLTNew Con	
422	7	HAMMER	P2	02.50	2SLTRec/Reb	
423	7	HAMMER	P3	02.50	2SLTRem/Repl	
424	7	HAMMER	P3-R	00.83	2SLTRemove	
425	7	HAMMER	P4	00.40	2SLTMIn Repl	
426	7	HAMMER	Q1	02.00	2ULTNew Con	
427	7	HAMMER	Q2	02.38	2ULTRec/Reb	
428	7	HAMMER	Q3	02.63	2ULTRem/Repl	
429	7	HAMMER	Q3-R	00.88	2ULTRemove	
430	7	HAMMER	Q4	00.40	2ULTMin Repl	
431	7	HAMMER	R1	02.75	3ALTNew Con	
432	7	HAMMER	R2	03.50	3ALTRec/Reb	
433	7	HAMMER	R3	03.50	3ALTRem/Repl	
434	7	HAMMER	R3-R	01.17	3ALTRemove	
435	7	HAMMER	R4	06.40	3ALTMIn Repl	
436	7	HAMMER	S1	10.75	4ALTMIn Con	
437	7	HAMMER	S2	14.88	4ALTRec/Reb	
438	7	HAMMER	S3	14.88	4ALTRem/Repl	
439	7	HAMMER	S3-R	04.96	4ALTRemove	
440	7	HAMMER	S4	01.21	4ALTMIn Repl	
441	7	HAMMER	U4	00.20	OADBNMin Repl	

	Dis- trict	ves	Name	Code	Service Time	
					in Hours	Description*
442	7	HAMMER	V4	00.40	OALTMIn Repl	
443	7	HAMMER	Y2	23.00	4SLTRec/Reb	
444	7	HAMMER	Y3	23.00	4SLTRem/Repl	
445	7	HAMMER	Y4	01.50	4SLTMIn Repl	
446	7	HUDSON	11	01.30	1ADBNNew Con	
447	7	HUDSON	12	01.30	1ADBNRec/Reb	
448	7	HUDSON	13	00.90	1ADBNRem/Repl	
449	7	HUDSON	13-R	00.30	1ADBNRemove	
450	7	HUDSON	14	00.20	1ADBNMin Repl	
451	7	HUDSON	21	01.50	1SDBNNew Con	
452	7	HUDSON	22	01.70	1SDBNRec/Reb	
453	7	HUDSON	23	03.00	1SDBNRem/Repl	
454	7	HUDSON	23-R	01.00	1SDBNRemove	
455	7	HUDSON	24	00.60	1SDBNMin Repl	
456	7	HUDSON	32	02.20	1ULTRec/Reb	
457	7	HUDSON	41	01.75	1SLTNew Con	
458	7	HUDSON	42	03.20	1SLTRec/Reb	
459	7	HUDSON	43	03.20	1SLTRem/Repl	
460	7	HUDSON	43-R	01.07	1SLTRemove	
461	7	HUDSON	44	00.80	1SLTMIn Repl	
462	7	HUDSON	52	03.00	3MLTRec/Reb	
463	7	HUDSON	61	06.70	3SLTNew Con	
464	7	HUDSON	63	08.90	3SLTRem/Repl	
465	7	HUDSON	63-R	02.97	3SLTRemove	
466	7	HUDSON	64	02.80	3SLTMIn Repl	
467	7	HUDSON	84	02.40	4SLTMIn Repl	
468	7	HUDSON	A1	00.20	Position Check	
469	7	HUDSON	A2	00.90	IM (LB)	
470	7	HUDSON	A3	00.90	IMC (LB)	
471	7	HUDSON	A5	01.30	MR (LB)	
472	7	HUDSON	A6	01.30	R (LB)	
473	7	HUDSON	B1	00.20	I (ULB)	
474	7	HUDSON	B2	00.60	IM (ULB)	
475	7	HUDSON	B3	00.60	MR (ULB)	
476	7	HUDSON	B4	00.50	R (ULB)	
477	7	HUDSON	F1	00.50	DBN	
478	7	HUDSON	F2	00.50	LT	
479	7	HUDSON	F8	00.60	Mooring	
480	7	HUDSON	F9	00.20	Pos Check	
481	7	HUDSON	FA	00.50	Relief	
482	7	HUDSON	G8	00.90	Mooring	
483	7	HUDSON	GA	01.30	Relief	
484	7	HUDSON	HU01	00.25	1 1/4 Hours	
485	7	HUDSON	HU02	00.50	2 1/4 Hours	
486	7	HUDSON	HU03	00.75	3 1/4 Hours	
487	7	HUDSON	HU04	01.00	4 1/4 Hours	
488	7	HUDSON	HU05	01.25	5 1/4 Hours	
489	7	HUDSON	HU06	01.50	6 1/4 Hours	
490	7	HUDSON	HU07	01.75	7 1/4 Hours	

Dis- trict	Vessel Name	Code	In Hours	Service Time	Description*	Dis- trict	Vessel Name	Code	In Hours	Service Time	Description*
491	HUDSON	HU08	02.00	8 1/4	Hours	540	HUDSON	HU45	11.25	45 1/4	Hours
492	HUDSON	HU09	02.25	9 1/4	Hours	541	HUDSON	HU46	11.50	46 1/4	Hours
493	HUDSON	HU10	02.50	10 1/4	Hours	542	HUDSON	HU47	11.75	47 1/4	Hours
494	HUDSON	HU11	02.75	11 1/4	Hours	543	HUDSON	HU48	12.00	48 1/4	Hours
495	HUDSON	HU12	03.00	12 1/4	Hours	544	HUDSON	HU49	12.25	49 1/4	Hours
496	HUDSON	HU13	03.25	13 1/4	Hours	545	HUDSON	HU4A	01.75	NewCon: 1P	Stl Lt
497	HUDSON	HU14	03.50	14 1/4	Hours	546	HUDSON	HU4B	03.20	RecReb: 1P	Stl Lt
498	HUDSON	HU15	03.75	15 1/4	Hours	547	HUDSON	HU4C	03.20	RecReb: 1P	Stl Lt
499	HUDSON	HU16	04.00	16 1/4	Hours	548	HUDSON	HU4D	00.80	MinRep: 1P	Stl Lt
500	HUDSON	HU17	04.25	17 1/4	Hours	549	HUDSON	HU50	12.50	50 1/4	Hours
501	HUDSON	HU18	04.50	18 1/4	Hours	550	HUDSON	HU51	12.75	51 1/4	Hours
502	HUDSON	HU19	04.75	19 1/4	Hours	551	HUDSON	HU52	13.00	52 1/4	Hours
503	HUDSON	HU1A	01.30	NewCon: 1P	DBN	552	HUDSON	HU53	13.25	53 1/4	Hours
504	HUDSON	HU1B	01.30	RecReb: 1P	DBN	553	HUDSON	HU54	13.50	54 1/4	Hours
505	HUDSON	HU1C	00.90	Rempl: 1P	DBN	554	HUDSON	HU55	13.75	55 1/4	Hours
506	HUDSON	HU1D	00.20	MinRep: 1P	DBN	555	HUDSON	HU56	14.00	56 1/4	Hours
507	HUDSON	HU20	05.00	20 1/4	Hours	556	HUDSON	HU57	14.25	57 1/4	Hours
508	HUDSON	HU21	05.25	21 1/4	Hours	557	HUDSON	HU58	14.50	58 1/4	Hours
509	HUDSON	HU22	05.50	22 1/4	Hours	558	HUDSON	HU59	14.75	59 1/4	Hours
510	HUDSON	HU23	05.75	23 1/4	Hours	559	HUDSON	HU5A	00.00	NewCon: 3P	Wd Lt
511	HUDSON	HU24	06.00	24 1/4	Hours	560	HUDSON	HU5B	03.00	RecReb: 1P	Stl Lt
512	HUDSON	HU25	06.25	25 1/4	Hours	561	HUDSON	HU5C	00.00	Rempl: 3P	Wd Lt
513	HUDSON	HU26	06.50	26 1/4	Hours	562	HUDSON	HU5D	00.00	MinRep: 3P	Wd Lt
514	HUDSON	HU27	06.75	27 1/4	Hours	563	HUDSON	HU60	15.00	60 1/4	Hours
515	HUDSON	HU28	07.00	28 1/4	Hours	564	HUDSON	HU6A	00.00	NewCon: 3P	Stl Lt
516	HUDSON	HU29	07.25	29 1/4	Hours	565	HUDSON	HU6B	00.00	RecReb: 3P	Stl Lt
517	HUDSON	HU2A	01.50	NewCon: 1P	DBN	566	HUDSON	HU6C	00.00	Rempl: 3P	Stl Lt
518	HUDSON	HU2B	01.70	RecReb: 1P	DBN	567	HUDSON	HU6D	00.00	MinRep: 3P	Stl Lt
519	HUDSON	HU2C	03.00	Rempl: 1P	DBN	568	HUDSON	HU7A	00.00	NewCon: 4P	Wd Lt
520	HUDSON	HU2D	00.60	MinRep: 1P	DBN	569	HUDSON	HU7B	00.00	RecReb: 4P	Wd Lt
521	HUDSON	HU30	07.50	30 1/4	Hours	570	HUDSON	HU7C	00.00	Rempl: 4P	Wd Lt
522	HUDSON	HU31	07.75	31 1/4	Hours	571	HUDSON	HU7D	00.00	MinRep: 4P	Wd Lt
523	HUDSON	HU32	08.00	32 1/4	Hours	572	HUDSON	HU8A	00.00	NewCon: 4P	Stl Lt
524	HUDSON	HU33	08.25	33 1/4	Hours	573	HUDSON	HU8B	00.00	RecReb: 4P	Stl Lt
525	HUDSON	HU34	08.50	34 1/4	Hours	574	HUDSON	HU8C	00.00	Rempl: 4P	Stl Lt
526	HUDSON	HU35	08.75	35 1/4	Hours	575	HUDSON	HU8D	02.40	MinRep: 4P	Stl Lt
527	HUDSON	HU36	09.00	36 1/4	Hours	576	HUDSON	HU9A	00.00	NewCon: 4P	Wd Rg
528	HUDSON	HU37	09.25	37 1/4	Hours	577	HUDSON	HU9B	00.00	RecReb: 4P	Wd Rg
529	HUDSON	HU38	09.50	38 1/4	Hours	578	HUDSON	HU9C	00.00	Rempl: 4P	Wd Rg
530	HUDSON	HU39	09.75	39 1/4	Hours	579	HUDSON	HU9D	00.00	MinRep: 4P	Wd Rg
531	HUDSON	HU3A	00.00	NewCon: 1P	Wd Lt	580	HUDSON	HU9A	00.00	NewCon: 4P	Stl Rg
532	HUDSON	HU3B	02.20	RecReb: 1P	Wd Lt	581	HUDSON	HU9B	00.00	RecReb: 4P	Stl Rg
533	HUDSON	HU3C	00.00	Rempl: 1P	Wd Lt	582	HUDSON	HU9C	00.00	Rempl: 4P	Stl Rg
534	HUDSON	HU3D	00.00	MinRep: 1P	Wd Lt	583	HUDSON	HU9D	02.50	MinRep: 4P	Stl Rg
535	HUDSON	HU40	10.00	40 1/4	Hours	584	HUDSON	HU9A	00.00	NewCon: 8P	Wd Rg
536	HUDSON	HU41	10.25	41 1/4	Hours	585	HUDSON	HU9B	00.00	RecReb: 8P	Wd Rg
537	HUDSON	HU42	10.50	42 1/4	Hours	586	HUDSON	HU9C	00.00	Rempl: 8P	Wd Rg
538	HUDSON	HU43	10.75	43 1/4	Hours	587	HUDSON	HU9D	00.00	MinRep: 8P	Wd Rg
539	HUDSON	HU44	11.00	44 1/4	Hours	588	HUDSON	HU9A	00.00	NewCon: 8P	Stl Rg

Dis- trict	Vessel Name	Code	In Hours	Service Time	Description*
589	7 HUDSON	HUCB	00.00	RecREb:8p Stl Rg	
590	7 HUDSON	HUCD	00.00	RemRpl:8p Stl Rg	
591	7 HUDSON	HUCD	00.00	MinRep:8p Stl Rg	
592	7 HUDSON	HUDA	00.00	NewCon:12p Wd Rg	
593	7 HUDSON	HUDB	00.00	RecREb:12p Wd Rg	
594	7 HUDSON	HUCD	00.00	RemRpl:12p Wd Rg	
595	7 HUDSON	HUCD	00.00	MinRep:12p Wd Rg	
596	7 HUDSON	HUEA	00.00	NewCon:12p St Rg	
597	7 HUDSON	HUEB	00.00	RecREb:12p St Rg	
598	7 HUDSON	HUEC	00.00	MinRep:12p St Rg	
599	7 HUDSON	HUED	00.00	NewCon:1p Con LT	
601	7 HUDSON	HUEA	00.00	RecREb:1p Con LT	
602	7 HUDSON	HUEB	00.00	RemRpl:1p Con LT	
603	7 HUDSON	HUEC	01.20	MinRep:1p Con LT	
604	7 HUDSON	HUEA	06.70	NewCon:5p Stl LT	
605	7 HUDSON	HUEB	00.00	RecREb:5p Stl LT	
606	7 HUDSON	HUEC	08.90	RemRpl:5p Stl LT	
607	7 HUDSON	HUEC	02.80	MinRep:5p Stl LT	
608	7 HUDSON	L1	01.40	1ADBNew Con	
609	7 HUDSON	L2	01.50	1ADBNew Rec	
610	7 HUDSON	L3	01.95	1ADBNew Repl	
611	7 HUDSON	L3-R	00.65	1ADBNew Remove	
612	7 HUDSON	L4	00.40	1ADBNew Reps	
613	7 HUDSON	M1	01.75	1ALTNew Con	
614	7 HUDSON	M2	02.70	1ALTNew Rec	
615	7 HUDSON	M3	03.20	1ALTNew Repl	
616	7 HUDSON	M3-R	01.07	1ALTNew Remove	
617	7 HUDSON	M4	00.80	1ALTNew Reps	
618	7 HUDSON	O1	04.23	2ALTNew Con	
619	7 HUDSON	O2	02.90	2ALTNew Rec	
620	7 HUDSON	O3	06.05	2ALTNew Repl	
621	7 HUDSON	O3-R	02.02	2ALTNew Remove	
622	7 HUDSON	O4	01.80	2ALTNew Reps	
623	7 HUDSON	P1	04.23	2SLTNew Con	
624	7 HUDSON	P2	03.20	2SLTNew Rec	
625	7 HUDSON	P3	06.05	2SLTNew Repl	
626	7 HUDSON	P3-R	02.02	2SLTNew Remove	
627	7 HUDSON	P4	01.80	2SLTNew Reps	
628	7 HUDSON	Q2	02.60	2ALTNew Rec	
629	7 HUDSON	R1	06.70	3ALTNew Con	
630	7 HUDSON	R2	03.00	3ALTNew Rec	
631	7 HUDSON	R3	08.90	3ALTNew Repl	
632	7 HUDSON	R3-R	02.97	3ALTNew Remove	
633	7 HUDSON	R4	02.80	3ALTNew Reps	
634	7 HUDSON	S4	02.45	4ALTNew Rec	
635	7 HUDSON	U4	00.40	0ADBNew Reps	
636	7 HUDSON	U4	00.50	0ALTNew Rec	
637	7 HUDSON	Y4	02.50	4SLTNew Reps	

Dis- trict	Vessel Name	Code	In Hours	Service Time	Description*
638	7 RAMBLER	11	01.00	1ADBNew Con	
639	7 RAMBLER	12	02.00	1ADBNew Rec	
640	7 RAMBLER	13	01.50	1ADBNew Repl	
641	7 RAMBLER	13-R	00.50	1ADBNew Remove	
642	7 RAMBLER	14	00.33	1ADBNew Reps	
643	7 RAMBLER	24	00.50	1SDBNew Con	
644	7 RAMBLER	31	02.00	1ALTNew Con	
645	7 RAMBLER	32	03.50	1ALTNew Rec	
646	7 RAMBLER	33	03.50	1ALTNew Repl	
647	7 RAMBLER	33-R	01.17	1ALTNew Remove	
648	7 RAMBLER	34	00.50	1ALTNew Reps	
649	7 RAMBLER	44	01.00	1SLTNew Con	
650	7 RAMBLER	51	03.00	3ALTNew Con	
651	7 RAMBLER	52	04.00	3ALTNew Rec	
652	7 RAMBLER	53	04.00	3ALTNew Repl	
653	7 RAMBLER	53-R	01.33	3ALTNew Remove	
654	7 RAMBLER	54	01.00	3ALTNew Reps	
655	7 RAMBLER	64	01.00	3SLTNew Con	
656	7 RAMBLER	71	02.00	4ALTNew Con	
657	7 RAMBLER	72	02.50	4ALTNew Rec	
658	7 RAMBLER	73	02.50	4ALTNew Repl	
659	7 RAMBLER	73-R	00.83	4ALTNew Remove	
660	7 RAMBLER	74	04.00	4ALTNew Reps	
661	7 RAMBLER	84	04.00	4SLTNew Con	
662	7 RAMBLER	91	02.00	4ALTNew Rec	
663	7 RAMBLER	92	02.50	4ALTNew Repl	
664	7 RAMBLER	93	02.50	4ALTNew Remove	
665	7 RAMBLER	93-R	00.83	4ALTNew Reps	
666	7 RAMBLER	94	04.00	4ALTNew Con	
667	7 RAMBLER	F5	01.00	Inspect	
668	7 RAMBLER	F8	01.50	Mooring	
669	7 RAMBLER	F9	00.25	Pos Check	
670	7 RAMBLER	FA	01.00	Relief	
671	7 RAMBLER	G5	01.00	Inspect	
672	7 RAMBLER	G7	01.50	Recharge	
673	7 RAMBLER	G8	01.50	Mooring	
674	7 RAMBLER	G9	00.25	Pos Check	
675	7 RAMBLER	GA	01.00	Relief	
676	7 RAMBLER	L1	01.00	1ADBNew Con	
677	7 RAMBLER	L2	02.00	1ADBNew Rec	
678	7 RAMBLER	L3	01.50	1ADBNew Repl	
679	7 RAMBLER	L3-R	00.50	1ADBNew Remove	
680	7 RAMBLER	L4	00.42	1ADBNew Reps	
681	7 RAMBLER	M1	02.00	1ALTNew Con	
682	7 RAMBLER	M2	03.50	1ALTNew Rec	
683	7 RAMBLER	M3	03.50	1ALTNew Repl	
684	7 RAMBLER	M3-R	01.17	1ALTNew Remove	
685	7 RAMBLER	M4	00.75	1ALTNew Reps	
686	7 RAMBLER	O1	02.50	2ALTNew Con	

	Dis- trict	Vessel Name	Code	in Hours	Service Time	Description*
687	7	RAMBLER	02	03.75	2ALTRec/Reb	
688	7	RAMBLER	03	03.75	2ALTRem/Repl	
689	7	RAMBLER	03-R	01.25	2ALTRemove	
690	7	RAMBLER	04	00.88	2ALTRMin Repl	
691	7	RAMBLER	P4	01.00	2SLTRMin Repl	
692	7	RAMBLER	01	02.50	2ALTRNew Con	
693	7	RAMBLER	02	03.75	2ALTRec/Reb	
694	7	RAMBLER	03	03.75	2ALTRem/Repl	
695	7	RAMBLER	03-R	01.25	2ALTRemove	
696	7	RAMBLER	04	00.75	2ALTRMin Repl	
697	7	RAMBLER	R1	03.00	3ALTRNew Con	
698	7	RAMBLER	R2	04.00	3ALTRec/Reb	
699	7	RAMBLER	R3	04.00	3ALTRem/Repl	
700	7	RAMBLER	R3-R	01.33	3ALTRemove	
701	7	RAMBLER	R4	01.00	3ALTRMin Repl	
702	7	RAMBLER	S1	02.00	4ALTRNew Con	
703	7	RAMBLER	S2	02.50	4ALTRec/Reb	
704	7	RAMBLER	S3	02.50	4ALTRem/Repl	
705	7	RAMBLER	S3-R	00.83	4ALTRemove	
706	7	RAMBLER	S4	04.00	4ALTRMin Repl	
707	7	RAMBLER	U4	00.42	0ADBNMin Repl	
708	7	RAMBLER	V4	00.75	0ALTRMin Repl	
709	7	RAMBLER	V4	04.00	4SLTRMin Repl	
710	7	SHILAX	11	01.00	1ADBNNew Con	
711	7	SHILAX	12	02.00	1ADBNRec/Reb	
712	7	SHILAX	13	01.50	1ADBNRem/Repl	
713	7	SHILAX	13-R	00.50	1ADBNRemove	
714	7	SHILAX	14	00.33	1ADBNMin Repl	
715	7	SHILAX	23	01.00	1SDBNRem/Repl	
716	7	SHILAX	23-R	00.33	1SDBNRemove	
717	7	SHILAX	24	00.50	1SDBNMin Repl	
718	7	SHILAX	31	02.00	1ALTRNew Con	
719	7	SHILAX	32	03.50	1ALTRec/Reb	
720	7	SHILAX	33	03.50	1ALTRem/Repl	
721	7	SHILAX	33-R	01.17	1ALTRemove	
722	7	SHILAX	34	00.50	1ALTRMin Repl	
723	7	SHILAX	44	01.00	1SLTRMin Repl	
724	7	SHILAX	51	03.00	3ALTRNew Con	
725	7	SHILAX	52	04.00	3ALTRec/Reb	
726	7	SHILAX	53	04.00	3ALTRem/Repl	
727	7	SHILAX	53-R	01.33	3ALTRemove	
728	7	SHILAX	54	01.00	3ALTRMin Repl	
729	7	SHILAX	64	01.00	3SLTRMin Repl	
730	7	SHILAX	71	48.00	4ALTRNew Con	
731	7	SHILAX	72	60.00	4ALTRec/Reb	
732	7	SHILAX	73	60.00	4ALTRem/Repl	
733	7	SHILAX	73-R	20.00	4ALTRemove	
734	7	SHILAX	74	04.00	4ALTRMin Repl	
735	7	SHILAX	84	04.00	4SLTRMin Repl	

	Dis- trict	Vessel Name	Code	in Hours	Service Time	Description*
736	7	SHILAX	91	48.00	4ALTRNew Con	
737	7	SHILAX	92	60.00	4ALTRec/Reb	
738	7	SHILAX	93	60.00	4ALTRem/Repl	
739	7	SHILAX	93-R	20.00	4ALTRemove	
740	7	SHILAX	94	04.00	4ALTRMin Repl	
741	7	SHILAX	F5	01.00	Inspect	
742	7	SHILAX	F8	01.50	Mooring	
743	7	SHILAX	F9	00.25	Pos Check	
744	7	SHILAX	FA	01.00	Relief	
745	7	SHILAX	G5	01.00	Inspect	
746	7	SHILAX	G7	01.50	Recharge	
747	7	SHILAX	G8	01.50	Mooring	
748	7	SHILAX	G9	00.25	Pos Check	
749	7	SHILAX	GA	01.00	Relief	
750	7	SHILAX	L1	01.00	1ADBNNew Con	
751	7	SHILAX	L2	02.00	1ADBNRec/Reb	
752	7	SHILAX	L3	01.25	1ADBNRem/Repl	
753	7	SHILAX	L3-R	00.42	1ADBNRemove	
754	7	SHILAX	L4	00.42	1ADBNMin Repl	
755	7	SHILAX	M1	02.00	1ALTRNew Con	
756	7	SHILAX	M2	03.50	1ALTRec/Reb	
757	7	SHILAX	M3	03.50	1ALTRem/Repl	
758	7	SHILAX	M3-R	01.17	1ALTRemove	
759	7	SHILAX	M4	00.75	1ALTRMin Repl	
760	7	SHILAX	O1	02.50	2ALTRNew Con	
761	7	SHILAX	O2	03.75	2ALTRec/Reb	
762	7	SHILAX	O3	03.75	2ALTRem/Repl	
763	7	SHILAX	O3-R	01.25	2ALTRemove	
764	7	SHILAX	O4	00.88	2ALTRMin Repl	
765	7	SHILAX	P4	01.00	2SLTRMin Repl	
766	7	SHILAX	Q1	02.50	2ALTRNew Con	
767	7	SHILAX	Q2	03.75	2ALTRec/Reb	
768	7	SHILAX	Q3	03.75	2ALTRem/Repl	
769	7	SHILAX	Q3-R	01.25	2ALTRemove	
770	7	SHILAX	Q4	00.75	2ALTRMin Repl	
771	7	SHILAX	R1	03.00	3ALTRNew Con	
772	7	SHILAX	R2	04.00	3ALTRec/Reb	
773	7	SHILAX	R3	04.00	3ALTRem/Repl	
774	7	SHILAX	R3-R	01.33	3ALTRemove	
775	7	SHILAX	R4	01.00	3ALTRMin Repl	
776	7	SHILAX	S1	48.00	4ALTRNew Con	
777	7	SHILAX	S2	60.00	4ALTRec/Reb	
778	7	SHILAX	S3	60.00	4ALTRem/Repl	
779	7	SHILAX	S3-R	20.00	4ALTRemove	
780	7	SHILAX	S4	04.00	4ALTRMin Repl	
781	7	SHILAX	T1	72.00	8ALTRNew Con	
782	7	SHILAX	T2	96.00	8ALTRec/Reb	
783	7	SHILAX	T3	84.00	8ALTRem/Repl	
784	7	SHILAX	T3-R	28.00	8ALTRemove	

	Dis- trict	Vessel Name	Code	in Hours	Description*	Service Time
785	7	SHILAX	14	04.00	8ALThIn Reps	
786	7	SHILAX	U4	00.42	0ADBNHIn Reps	
787	7	SHILAX	V4	00.75	0ALThIn Reps	
788	7	SHILAX	X1	72.00	8ALThIn Con	
789	7	SHILAX	X2	96.00	8ALThIn Reb	
790	7	SHILAX	X3	84.00	8ALThIn Repl	
791	7	SHILAX	X3-R	28.00	8ALThIn Remove	
792	7	SHILAX	X4	04.00	8ALThIn Reps	
793	7	SHILAX	Y4	04.00	4SLThIn Reps	
794	7	SHILAX	11	00.75	1ADBNHIn Con	
795	7	SHILAX	12	02.50	1ADBNHIn Reb	
796	7	SHILAX	13	01.00	1ADBNHIn Repl	
797	7	SHILAX	13-R	00.33	1ADBNHIn Remove	
798	7	SHILAX	14	00.17	1ADBNHIn Reps	
799	7	SHILAX	21	00.75	1SDBNHIn Con	
800	7	SHILAX	22	03.00	1SDBNHIn Reb	
801	7	SHILAX	23	02.00	1SDBNHIn Repl	
802	7	SHILAX	23-R	00.67	1SDBNHIn Remove	
803	7	SHILAX	24	00.50	1SDBNHIn Reps	
804	7	SHILAX	31	01.50	1ALThIn Con	
805	7	SHILAX	32	03.00	1ALThIn Reb	
806	7	SHILAX	33	02.00	1ALThIn Repl	
807	7	SHILAX	33-R	00.67	1ALThIn Remove	
808	7	SHILAX	34	01.00	1ALThIn Reps	
809	7	SHILAX	41	01.50	1SLThIn Con	
810	7	SHILAX	42	03.50	1SLThIn Reb	
811	7	SHILAX	43	03.50	1SLThIn Repl	
812	7	SHILAX	43-R	01.17	1SLThIn Remove	
813	7	SHILAX	44	00.50	1SLThIn Reps	
814	7	SHILAX	51	02.50	3ALThIn Con	
815	7	SHILAX	52	04.50	3ALThIn Reb	
816	7	SHILAX	53	04.50	3ALThIn Repl	
817	7	SHILAX	53-R	01.50	3ALThIn Remove	
818	7	SHILAX	54	01.00	3ALThIn Reps	
819	7	SHILAX	71	04.00	4ALThIn Con	
820	7	SHILAX	72	06.00	4ALThIn Reb	
821	7	SHILAX	73	06.00	4ALThIn Repl	
822	7	SHILAX	73-R	02.00	4ALThIn Remove	
823	7	SHILAX	74	01.50	4ALThIn Reps	
824	7	SHILAX	81	08.00	4SLThIn Con	
825	7	SHILAX	82	16.00	4SLThIn Reb	
826	7	SHILAX	83	15.00	4SLThIn Repl	
827	7	SHILAX	83-R	05.00	4SLThIn Remove	
828	7	SHILAX	84	02.00	4SLThIn Reps	
829	7	SHILAX	91	08.00	4ALThIn Con	
830	7	SHILAX	92	10.00	4ALThIn Reb	
831	7	SHILAX	93	12.00	4ALThIn Repl	
832	7	SHILAX	93-R	04.00	4ALThIn Remove	
833	7	SHILAX	94	02.00	4ALThIn Reps	

	Dis- trict	Vessel Name	Code	in Hours	Description*	Service Time
834	7	SHILAX	H5	00.17	DBNInspect	
835	7	SHILAX	H6	00.17	DBNDayd Ch	
836	7	SHILAX	J5	01.00	LTInspect	
837	7	SHILAX	J6	02.00	LTDayd Ch	
838	7	SHILAX	K5	01.00	LTInspect	
839	7	SHILAX	K6	02.50	LTDayd Ch	
840	7	SHILAX	L1	00.75	1ADBNHIn Con	
841	7	SHILAX	L2	02.75	1ADBNHIn Reb	
842	7	SHILAX	L3	01.50	1ADBNHIn Repl	
843	7	SHILAX	L3-R	00.50	1ADBNHIn Remove	
844	7	SHILAX	L4	00.34	1ADBNHIn Reps	
845	7	SHILAX	M1	01.50	1ALThIn Con	
846	7	SHILAX	M2	03.25	1ALThIn Reb	
847	7	SHILAX	M3	02.75	1ALThIn Repl	
848	7	SHILAX	M3-R	00.92	1ALThIn Remove	
849	7	SHILAX	M4	00.75	1ALThIn Reps	
850	7	SHILAX	O1	01.75	2ALThIn Con	
851	7	SHILAX	O2	03.63	2ALThIn Reb	
852	7	SHILAX	O3	03.38	2ALThIn Repl	
853	7	SHILAX	O3-R	01.13	2ALThIn Remove	
854	7	SHILAX	O4	00.75	2ALThIn Reps	
855	7	SHILAX	P1	01.50	2SLThIn Con	
856	7	SHILAX	P2	03.50	2SLThIn Reb	
857	7	SHILAX	P3	03.50	2SLThIn Repl	
858	7	SHILAX	P3-R	01.17	2SLThIn Remove	
859	7	SHILAX	P4	00.50	2SLThIn Reps	
860	7	SHILAX	Q1	02.00	2ALThIn Con	
861	7	SHILAX	Q2	03.75	2ALThIn Reb	
862	7	SHILAX	Q3	03.25	2ALThIn Repl	
863	7	SHILAX	Q3-R	01.08	2ALThIn Remove	
864	7	SHILAX	Q4	01.00	2ALThIn Reps	
865	7	SHILAX	R1	02.50	3ALThIn Con	
866	7	SHILAX	R2	04.50	3ALThIn Reb	
867	7	SHILAX	R3	04.50	3ALThIn Repl	
868	7	SHILAX	R3-R	01.50	3ALThIn Remove	
869	7	SHILAX	R4	01.00	3ALThIn Reps	
870	7	SHILAX	S1	06.67	4ALThIn Con	
871	7	SHILAX	S2	10.67	4ALThIn Reb	
872	7	SHILAX	S3	11.00	4ALThIn Repl	
873	7	SHILAX	S3-R	03.67	4ALThIn Remove	
874	7	SHILAX	S4	01.83	4ALThIn Reps	
875	7	SHILAX	U4	00.34	0ADBNHIn Reps	
876	7	SHILAX	V4	00.75	0ALThIn Reps	
877	7	SHILAX	U4	00.50	0SLThIn Reps	
878	8	ANVIL	11	00.50	1ADBNHIn Con	
879	8	ANVIL	12	01.00	1ADBNHIn Reb	
880	8	ANVIL	13	01.00	1ADBNHIn Repl	
881	8	ANVIL	13-R	00.33	1ADBNHIn Remove	
882	8	ANVIL	14	00.25	1ADBNHIn Reps	

Dis- trict	Vessel Name	Code	Service Time in Hours	Description*
883	8 ANVIL	31	01.00	1ALTNW Con
884	8 ANVIL	32	01.50	1ALTRec/Reb
885	8 ANVIL	33	01.50	1ALTRem/Repl
886	8 ANVIL	33-R	00.50	1ALTRemove
887	8 ANVIL	34	00.75	1ALTNW Repl
888	8 ANVIL	51	04.00	3ALTNW Con
889	8 ANVIL	52	06.00	3ALTRec/Reb
890	8 ANVIL	53	06.00	3ALTRem/Repl
891	8 ANVIL	53-R	02.00	3ALTRemove
892	8 ANVIL	54	00.75	3ALTNW Repl
893	8 ANVIL	91	12.00	4ALTNW Con
894	8 ANVIL	92	16.00	4ALTRec/Reb
895	8 ANVIL	93	16.00	4ALTRem/Repl
896	8 ANVIL	93-R	05.33	4ALTRemove
897	8 ANVIL	94	02.00	4ALTNW Repl
898	8 ANVIL	F5	00.25	Inspect
899	8 ANVIL	F8	00.50	Mooring
900	8 ANVIL	F9	00.25	Pos Check
901	8 ANVIL	FA	00.50	Relief
902	8 ANVIL	G5	00.75	Inspect
903	8 ANVIL	G7	01.00	Recharge
904	8 ANVIL	G8	02.50	Mooring
905	8 ANVIL	G9	00.25	Pos Check
906	8 ANVIL	GA	02.00	Relief
907	8 ANVIL	H5	00.13	DBNInspect
908	8 ANVIL	H6	00.25	DBNDayBrd Ch
909	8 ANVIL	15	00.50	LTInspect
910	8 ANVIL	16	00.25	LTDayBrd Ch
911	8 ANVIL	17	01.00	LTRecharge
912	8 ANVIL	J5	00.50	LTInspect
913	8 ANVIL	J6	01.00	LTDayBrd Ch
914	8 ANVIL	J7	01.00	LTRecharge
915	8 ANVIL	K5	00.50	LTInspect
916	8 ANVIL	K6	02.00	LTDayBrd Ch
917	8 ANVIL	K7	01.00	LTRecharge
918	8 ANVIL	L1	00.50	1ADBNW Con
919	8 ANVIL	L2	01.00	1ADBNW Repl
920	8 ANVIL	L3	01.00	1ADBNW Repl
921	8 ANVIL	L3-R	00.33	1ADBNW Repl
922	8 ANVIL	L4	00.25	1ADBNW Repl
923	8 ANVIL	M1	01.00	1ALTNW Con
924	8 ANVIL	M2	01.50	1ALTRec/Reb
925	8 ANVIL	M3	01.50	1ALTRem/Repl
926	8 ANVIL	M3-R	00.50	1ALTRemove
927	8 ANVIL	M4	00.75	1ALTNW Repl
928	8 ANVIL	O1	02.50	2ALTNW Con
929	8 ANVIL	O2	03.75	2ALTRec/Reb
930	8 ANVIL	O3	03.75	2ALTRem/Repl
931	8 ANVIL	O3-R	01.25	2ALTRemove

Dis- trict	Vessel Name	Code	Service Time in Hours	Description*
932	8 ANVIL	O4	00.75	2ALTNW Repl
933	8 ANVIL	Q1	02.50	2ALTNW Con
934	8 ANVIL	Q2	03.75	2ALTRec/Reb
935	8 ANVIL	Q3	03.75	2ALTRem/Repl
936	8 ANVIL	Q3-R	01.25	2ALTRemove
937	8 ANVIL	Q4	00.75	2ALTNW Repl
938	8 ANVIL	R1	04.00	3ALTNW Con
939	8 ANVIL	R2	06.00	3ALTRec/Reb
940	8 ANVIL	R3	06.00	3ALTRem/Repl
941	8 ANVIL	R3-R	02.00	3ALTRemove
942	8 ANVIL	R4	00.75	3ALTNW Repl
943	8 ANVIL	S1	12.00	4ALTNW Con
944	8 ANVIL	S2	16.00	4ALTRec/Reb
945	8 ANVIL	S3	16.00	4ALTRem/Repl
946	8 ANVIL	S3-R	05.33	4ALTRemove
947	8 ANVIL	S4	02.00	4ALTNW Repl
948	8 ANVIL	T1	24.00	4ALTNW Con
949	8 ANVIL	T2	30.00	4ALTRec/Reb
950	8 ANVIL	T3	30.00	4ALTRem/Repl
951	8 ANVIL	T3-R	10.00	4ALTRemove
952	8 ANVIL	T4	02.00	4ALTNW Repl
953	8 ANVIL	U4	00.25	4ADBNW Repl
954	8 ANVIL	V4	00.75	4ALTNW Repl
955	8 ANVIL	X1	24.00	4ALTNW Con
956	8 ANVIL	X2	30.00	4ALTRec/Reb
957	8 ANVIL	X3	30.00	4ALTRem/Repl
958	8 ANVIL	X3-R	10.00	4ALTRemove
959	8 ANVIL	X4	02.00	4ALTNW Repl
960	8 AXE	11	00.50	1ADBNW Con
961	8 AXE	12	00.70	1ADBNW Repl
962	8 AXE	13	00.60	1ADBNW Repl
963	8 AXE	13-R	00.20	1ADBNW Repl
964	8 AXE	14	00.10	1ADBNW Repl
965	8 AXE	31	00.80	1ALTNW Con
966	8 AXE	32	01.20	1ALTRec/Reb
967	8 AXE	33	01.10	1ALTRem/Repl
968	8 AXE	33-R	00.37	1ALTRemove
969	8 AXE	34	00.20	1ALTNW Repl
970	8 AXE	51	02.50	3ALTNW Con
971	8 AXE	52	03.00	3ALTRec/Reb
972	8 AXE	53	03.00	3ALTRem/Repl
973	8 AXE	53-R	01.00	3ALTRemove
974	8 AXE	54	00.50	3ALTNW Repl
975	8 AXE	73	03.00	4ALTRec/Reb
976	8 AXE	73-R	01.00	4ALTRemove
977	8 AXE	91	18.00	4ALTNW Con
978	8 AXE	92	22.00	4ALTRec/Reb
979	8 AXE	93	22.00	4ALTRem/Repl
980	8 AXE	93-R	07.33	4ALTRemove

Dis- trict	Vessel Name	Code	Service Time in Hours	Description*
981	8 AXE	94	02.00	4ULTMn Reps
982	8 AXE	F5	01.30	Inspect
983	8 AXE	F8	00.30	Mooring
984	8 AXE	F9	00.50	Pos Check
985	8 AXE	FA	00.20	Relief
986	8 AXE	L1	00.50	1ADBNew Con
987	8 AXE	L2	00.70	1ADBNew Rec/Reb
988	8 AXE	L3	00.60	1ADBNew Rec/Repl
989	8 AXE	L3-R	00.20	1ADBNew Remove
990	8 AXE	L4	00.10	1ADBNew Con
991	8 AXE	M1	00.80	1ALTNew Con
992	8 AXE	M2	01.20	1ALTNew Rec/Reb
993	8 AXE	M3	01.10	1ALTNew Rec/Repl
994	8 AXE	M3-R	00.37	1ALTNew Remove
995	8 AXE	M4	00.20	1ALTNew Con
996	8 AXE	01	01.65	2ALTNew Con
997	8 AXE	02	02.10	2ALTNew Rec/Reb
998	8 AXE	03	02.05	2ALTNew Rec/Repl
999	8 AXE	03-R	00.68	2ALTNew Remove
1000	8 AXE	04	00.35	2ALTNew Con
1001	8 AXE	01	01.65	2ULTNew Con
1002	8 AXE	02	02.10	2ULTNew Rec/Reb
1003	8 AXE	03	02.05	2ULTNew Rec/Repl
1004	8 AXE	03-R	00.68	2ULTNew Remove
1005	8 AXE	04	00.35	2ULTNew Con
1006	8 AXE	R1	02.50	3ALTNew Con
1007	8 AXE	R2	03.00	3ALTNew Rec/Reb
1008	8 AXE	R3	03.00	3ALTNew Rec/Repl
1009	8 AXE	R3-R	01.00	3ALTNew Remove
1010	8 AXE	R4	00.50	3ALTNew Con
1011	8 AXE	S1	18.00	4ALTNew Con
1012	8 AXE	S2	22.00	4ALTNew Rec/Reb
1013	8 AXE	S3	12.50	4ALTNew Rec/Repl
1014	8 AXE	S3-R	04.17	4ALTNew Remove
1015	8 AXE	S4	02.00	4ALTNew Con
1016	8 AXE	U4	00.10	0ADBNew Con
1017	8 AXE	V4	00.20	0ALTNew Con
1018	8 CLAMP	11	01.00	1ADBNew Con
1019	8 CLAMP	12	01.00	1ADBNew Rec/Reb
1020	8 CLAMP	14	00.25	1ADBNew Rec/Repl
1021	8 CLAMP	31	01.75	1ULTNew Con
1022	8 CLAMP	32	02.25	1ULTNew Rec/Reb
1023	8 CLAMP	34	00.75	1ULTNew Con
1024	8 CLAMP	51	03.00	3ULTNew Con
1025	8 CLAMP	52	04.75	3ULTNew Rec/Reb
1026	8 CLAMP	54	00.75	3ULTNew Con
1027	8 CLAMP	91	16.00	4ULTNew Con
1028	8 CLAMP	92	20.00	4ULTNew Rec/Reb
1029	8 CLAMP	94	02.75	4ULTNew Rec/Repl

Dis- trict	Vessel Name	Code	Service Time in Hours	Description*
1030	8 CLAMP	F5	00.50	Inspect
1031	8 CLAMP	F8	01.00	Mooring
1032	8 CLAMP	F9	00.20	Pos Check
1033	8 CLAMP	FA	00.50	Relief
1034	8 CLAMP	G5	00.50	Inspect
1035	8 CLAMP	G7	00.50	Recharge
1036	8 CLAMP	G8	01.00	Mooring
1037	8 CLAMP	G9	00.20	Pos Check
1038	8 CLAMP	GA	00.80	Relief
1039	8 CLAMP	L1	01.00	1ADBNew Con
1040	8 CLAMP	L2	01.30	1ADBNew Rec/Reb
1041	8 CLAMP	L4	00.25	1ADBNew Rec/Repl
1042	8 CLAMP	M1	01.75	1ALTNew Con
1043	8 CLAMP	M2	02.25	1ALTNew Rec/Reb
1044	8 CLAMP	M4	00.75	1ALTNew Rec/Repl
1045	8 CLAMP	01	02.38	2ALTNew Con
1046	8 CLAMP	02	03.50	2ALTNew Rec/Reb
1047	8 CLAMP	04	00.75	2ALTNew Rec/Repl
1048	8 CLAMP	01	02.38	2ULTNew Con
1049	8 CLAMP	02	03.50	2ULTNew Rec/Reb
1050	8 CLAMP	04	00.75	2ULTNew Rec/Repl
1051	8 CLAMP	R1	03.00	3ALTNew Con
1052	8 CLAMP	R2	04.75	3ALTNew Rec/Reb
1053	8 CLAMP	R4	00.75	3ALTNew Rec/Repl
1054	8 CLAMP	S1	16.00	4ALTNew Con
1055	8 CLAMP	S2	20.00	4ALTNew Rec/Reb
1056	8 CLAMP	S4	02.75	4ALTNew Rec/Repl
1057	8 CLAMP	T1	24.00	8ALTNew Con
1058	8 CLAMP	T2	26.00	8ALTNew Rec/Reb
1059	8 CLAMP	T4	02.75	8ALTNew Rec/Repl
1060	8 CLAMP	U4	00.25	0ADBNew Con
1061	8 CLAMP	V4	00.75	0ALTNew Con
1062	8 CLAMP	X1	24.00	8ULTNew Con
1063	8 CLAMP	X2	26.00	8ULTNew Rec/Reb
1064	8 CLAMP	X4	02.75	8ULTNew Rec/Repl
1065	8 Fleet Average	11	00.60	1ADBNew Con
1066	8 Fleet Average	12	01.00	1ADBNew Rec/Reb
1067	8 Fleet Average	13	00.89	1ADBNew Rec/Repl
1068	8 Fleet Average	13-R	00.30	1ADBNew Remove
1069	8 Fleet Average	14	00.22	1ADBNew Rec/Repl
1070	8 Fleet Average	21	01.50	1SDBNew Con
1071	8 Fleet Average	31	01.04	1ULTNew Con
1072	8 Fleet Average	32	01.50	1ULTNew Rec/Reb
1073	8 Fleet Average	33	01.35	1ULTNew Rec/Repl
1074	8 Fleet Average	33-R	00.45	1ULTNew Remove
1075	8 Fleet Average	34	00.47	1ULTNew Rec/Repl
1076	8 Fleet Average	41	02.88	1SLTNew Con
1077	8 Fleet Average	42	02.50	1SLTNew Rec/Reb
1078	8 Fleet Average	43	02.50	1SLTNew Rec/Repl

Dis- trict	Vessel Name	Code	Service Time in Hours	Description*
1179	8 Fleet Average	43-R	00.83	1SLTRemove
1180	8 Fleet Average	44	00.75	1SLTMIn Reps
1181	8 Fleet Average	51	02.57	3ALTMIn Con
1182	8 Fleet Average	52	03.61	3ALTRec/Reb
1183	8 Fleet Average	53	03.67	3ALTRem/Repl
1184	8 Fleet Average	53-R	01.22	3ALTRemove
1185	8 Fleet Average	54	00.71	3ALTMIn Reps
1186	8 Fleet Average	71	08.67	4ALTMIn Con
1187	8 Fleet Average	72	10.67	4ALTRec/Reb
1188	8 Fleet Average	73	09.75	4ALTRem/Repl
1189	8 Fleet Average	73-R	03.25	4ALTRemove
1190	8 Fleet Average	74	01.17	4ALTMIn Reps
1191	8 Fleet Average	91	13.25	4ALTMIn Con
1192	8 Fleet Average	92	17.00	4ALTRec/Reb
1193	8 Fleet Average	93	17.43	4ALTRem/Repl
1194	8 Fleet Average	93-R	05.81	4ALTRemove
1095	8 Fleet Average	94	02.28	4ALTMIn Reps
1096	8 Fleet Average	01	21.33	12ALTMIn Con
1097	8 Fleet Average	D2	26.00	12ALTRec/Reb
1098	8 Fleet Average	D3	27.00	12ALTRem/Repl
1099	8 Fleet Average	D3-R	09.00	12ALTRemove
1100	8 Fleet Average	D4	06.00	12ALTMIn Reps
1101	8 Fleet Average	F5	00.33	Inspect
1102	8 Fleet Average	F8	00.49	Mooring
1103	8 Fleet Average	F9	00.31	Pos Check
1104	8 Fleet Average	FA	00.36	Relief
1105	8 Fleet Average	G5	00.58	Inspect
1106	8 Fleet Average	G7	00.94	Recharge
1107	8 Fleet Average	G8	01.29	Mooring
1108	8 Fleet Average	G9	00.27	Pos Check
1109	8 Fleet Average	GA	00.93	Relief
1110	8 Fleet Average	H5	00.15	DBNInspect
1111	8 Fleet Average	H6	00.25	DBNDayBrd Ch
1112	8 Fleet Average	I5	00.46	LTInspect
1113	8 Fleet Average	I6	00.38	LTDayBrd Ch
1114	8 Fleet Average	I7	00.88	LTRecharge
1115	8 Fleet Average	J5	00.63	LTInspect
1116	8 Fleet Average	J6	01.25	LTDayBrd Ch
1117	8 Fleet Average	J7	01.25	LTRecharge
1118	8 Fleet Average	K5	01.00	LTInspect
1119	8 Fleet Average	K6	02.50	LTDayBrd Ch
1120	8 Fleet Average	K7	01.75	LTRecharge
1121	8 Fleet Average	L1	00.70	1ADBNNew Con
1122	8 Fleet Average	L2	01.00	1ADBNRec/Reb
1123	8 Fleet Average	L3	00.89	1ADBNRem/Repl
1124	8 Fleet Average	L3-R	00.30	1ADBNRemove
1125	8 Fleet Average	L4	00.22	1ADBNMIn Reps
1126	8 Fleet Average	M1	01.26	1ALTMIn Con
1127	8 Fleet Average	M2	01.58	1ALTRec/Reb

Dis- trict	Vessel Name	Code	Service Time in Hours	Description*
1128	8 Fleet Average	M3	01.43	1ALTRem/Repl
1129	8 Fleet Average	M3-R	00.48	1ALTRemove
1130	8 Fleet Average	M4	00.48	1ALTMIn Reps
1131	8 Fleet Average	M1	21.33	12ALTMIn Con
1132	8 Fleet Average	M2	26.00	12ALTRec/Reb
1133	8 Fleet Average	M3	27.00	12ALTRem/Repl
1134	8 Fleet Average	M3-R	09.00	12ALTRemove
1135	8 Fleet Average	M4	06.00	12ALTMIn Reps
1136	8 Fleet Average	O1	01.84	2ALTMIn Con
1137	8 Fleet Average	O2	02.41	2ALTRec/Reb
1138	8 Fleet Average	O3	02.30	2ALTRem/Repl
1139	8 Fleet Average	O3-R	00.77	2ALTRemove
1140	8 Fleet Average	O4	00.58	2ALTMIn Reps
1141	8 Fleet Average	P1	02.88	2SLTMIn Con
1142	8 Fleet Average	P2	02.50	2SLTRec/Reb
1143	8 Fleet Average	P3	02.50	2SLTRem/Repl
1144	8 Fleet Average	P3-R	00.83	2SLTRemove
1145	8 Fleet Average	P4	00.75	2SLTMIn Reps
1146	8 Fleet Average	Q1	01.69	2ALTMIn Con
1147	8 Fleet Average	Q2	02.39	2ALTRec/Reb
1148	8 Fleet Average	Q3	02.32	2ALTRem/Repl
1149	8 Fleet Average	Q3-R	00.77	2ALTRemove
1150	8 Fleet Average	Q4	00.56	2ALTMIn Reps
1151	8 Fleet Average	R1	02.57	3ALTMIn Con
1152	8 Fleet Average	R2	03.61	3ALTRec/Reb
1153	8 Fleet Average	R3	03.67	3ALTRem/Repl
1154	8 Fleet Average	R3-R	01.22	3ALTRemove
1155	8 Fleet Average	R4	00.71	3ALTMIn Reps
1156	8 Fleet Average	S1	13.13	4ALTMIn Con
1157	8 Fleet Average	S2	16.88	4ALTRec/Reb
1158	8 Fleet Average	S3	15.93	4ALTRem/Repl
1159	8 Fleet Average	S3-R	05.31	4ALTRemove
1160	8 Fleet Average	S4	01.22	4ALTMIn Reps
1161	8 Fleet Average	T1	19.00	8ALTMIn Con
1162	8 Fleet Average	T2	24.50	8ALTRec/Reb
1163	8 Fleet Average	T3	24.80	8ALTRem/Repl
1164	8 Fleet Average	T3-R	08.27	8ALTRemove
1165	8 Fleet Average	T4	03.79	8ALTMIn Reps
1166	8 Fleet Average	U4	00.22	0ADBNMIn Reps
1167	8 Fleet Average	V4	00.48	0ALTMIn Reps
1168	8 Fleet Average	X1	19.00	8ALTMIn Con
1169	8 Fleet Average	X2	24.50	8ALTRec/Reb
1170	8 Fleet Average	X3	24.80	8ALTRem/Repl
1171	8 Fleet Average	X3-R	08.27	8ALTRemove
1172	8 Fleet Average	X4	03.79	8ALTMIn Reps
1173	8 HATCHET	11	00.50	1ADBNNew Con
1174	8 HATCHET	12	00.75	1ADBNRec/Reb
1175	8 HATCHET	13	00.75	1ADBNRem/Repl
1176	8 HATCHET	13-R	00.25	1ADBNRemove

Dis- trict	Vessel Name	Code	In Hours	Description*	Service Time
1177	8 HATCHET	14	00.17	1ADBNMin Repl	
1178	8 HATCHET	31	00.75	1ALTN New Con	
1179	8 HATCHET	32	01.00	1ALTRec/Reb	
1180	8 HATCHET	33	01.00	1ALTRem/Repl	
1181	8 HATCHET	33-R	00.33	1ALTRemove	
1182	8 HATCHET	34	00.25	1ALTN Min Repl	
1183	8 HATCHET	91	16.00	4ALTN New Con	
1184	8 HATCHET	92	22.00	4ALTRec/Reb	
1185	8 HATCHET	93	22.00	4ALTRem/Repl	
1186	8 HATCHET	93-R	07.33	4ALTRemove	
1187	8 HATCHET	94	03.00	4ALTN Min Repl	
1188	8 HATCHET	F5	00.08	Inspect	
1189	8 HATCHET	F8	00.17	Mooring	
1190	8 HATCHET	F9	00.12	Pos Check	
1191	8 HATCHET	FA	00.17	Relief	
1192	8 HATCHET	G5	00.08	Inspect	
1193	8 HATCHET	G7	00.25	Recharge	
1194	8 HATCHET	G8	00.17	Mooring	
1195	8 HATCHET	G9	00.12	Pos Check	
1196	8 HATCHET	GA	00.17	Relief	
1197	8 HATCHET	L1	00.50	1ADBN New Con	
1198	8 HATCHET	L2	00.75	1ADBN Rec/Reb	
1199	8 HATCHET	L3	00.75	1ADBN Rem/Repl	
1200	8 HATCHET	L3-R	00.25	1ADBN Remove	
1201	8 HATCHET	L4	00.17	1ADBN Min Repl	
1202	8 HATCHET	M1	00.75	1ALTN New Con	
1203	8 HATCHET	M2	01.00	1ALTRec/Reb	
1204	8 HATCHET	M3	01.00	1ALTRem/Repl	
1205	8 HATCHET	M3-R	00.33	1ALTRemove	
1206	8 HATCHET	M4	00.25	1ALTN Min Repl	
1207	8 HATCHET	O1	00.75	2ALTN New Con	
1208	8 HATCHET	O2	01.00	2ALTRec/Reb	
1209	8 HATCHET	O3	01.00	2ALTRem/Repl	
1210	8 HATCHET	O3-R	00.33	2ALTRemove	
1211	8 HATCHET	O4	00.25	2ALTN Min Repl	
1212	8 HATCHET	Q1	00.75	2ALTN New Con	
1213	8 HATCHET	Q2	01.00	2ALTRec/Reb	
1214	8 HATCHET	Q3	01.00	2ALTRem/Repl	
1215	8 HATCHET	Q3-R	00.33	2ALTRemove	
1216	8 HATCHET	Q4	00.25	2ALTN Min Repl	
1217	8 HATCHET	S1	16.00	4ALTN New Con	
1218	8 HATCHET	S2	22.00	4ALTRec/Reb	
1219	8 HATCHET	S3	22.00	4ALTRem/Repl	
1220	8 HATCHET	S3-R	07.33	4ALTRemove	
1221	8 HATCHET	S4	03.00	4ALTN Min Repl	
1222	8 HATCHET	U4	00.17	OADBN Min Repl	
1223	8 HATCHET	V4	00.25	OADBN New Con	
1224	8 HATCHET	11	00.33	1ADBN New Con	
1225	8 HATCHET	12	01.50	1ADBN Rec/Reb	

Dis- trict	Vessel Name	Code	In Hours	Description*	Service Time
1226	8 MALLET	13	00.66	1ADBN Rem/Repl	
1227	8 MALLET	13-R	00.22	1ADBN Remove	
1228	8 MALLET	14	00.25	1ADBN Min Repl	
1229	8 MALLET	31	01.00	1ALTN New Con	
1230	8 MALLET	32	02.00	1ALTRec/Reb	
1231	8 MALLET	33	01.50	1ALTRem/Repl	
1232	8 MALLET	33-R	00.50	1ALTRemove	
1233	8 MALLET	34	00.50	1ALTN Min Repl	
1234	8 MALLET	51	02.00	3ALTN New Con	
1235	8 MALLET	52	03.00	3ALTRec/Reb	
1236	8 MALLET	53	03.00	3ALTRem/Repl	
1237	8 MALLET	53-R	01.00	3ALTRemove	
1238	8 MALLET	54	01.00	3ALTN Min Repl	
1239	8 MALLET	71	04.00	4ALTN New Con	
1240	8 MALLET	72	06.00	4ALTRec/Reb	
1241	8 MALLET	73	08.00	4ALTRem/Repl	
1242	8 MALLET	73-R	02.67	4ALTRemove	
1243	8 MALLET	74	01.50	4ALTN Min Repl	
1244	8 MALLET	91	06.00	4ALTN New Con	
1245	8 MALLET	92	08.00	4ALTRec/Reb	
1246	8 MALLET	93	10.00	4ALTRem/Repl	
1247	8 MALLET	93-R	03.33	4ALTRemove	
1248	8 MALLET	94	02.50	4ALTN Min Repl	
1249	8 MALLET	A1	01.00	I (LB)	
1250	8 MALLET	A2	01.50	IM (LB)	
1251	8 MALLET	A3	02.00	IMC (LB)	
1252	8 MALLET	A4	02.00	IC (LB)	
1253	8 MALLET	A5	01.50	MR (LB)	
1254	8 MALLET	A6	01.50	R (LB)	
1255	8 MALLET	B1	00.33	I (ULB)	
1256	8 MALLET	B2	00.50	IM (ULB)	
1257	8 MALLET	B3	00.50	IMR (ULB)	
1258	8 MALLET	B4	00.50	R (ULB)	
1259	8 MALLET	C1	00.50	Sp	
1260	8 MALLET	C2	00.25	Fa	
1261	8 MALLET	D1	20.00	12ALTN New Con	
1262	8 MALLET	D2	24.00	12ALTRec/Reb	
1263	8 MALLET	D3	25.00	12ALTRem/Repl	
1264	8 MALLET	D3-R	08.33	12ALTRemove	
1265	8 MALLET	D4	14.00	12ALTN Min Repl	
1266	8 MALLET	F1	00.25	I	
1267	8 MALLET	F2	00.50	I	
1268	8 MALLET	F5	00.33	Inspect	
1269	8 MALLET	F8	00.50	Mooring	
1270	8 MALLET	F9	00.50	Pos Check	
1271	8 MALLET	FA	00.08	Relief	
1272	8 MALLET	G5	01.00	Inspect	
1273	8 MALLET	G7	02.00	Recharge	
1274	8 MALLET	G8	01.50	Mooring	

	Dis- trict	Vessel Name	Code	in Hours	Description*	Service Time
1275	8	MALLET	G9	00.50	Pos Check	
1276	8	MALLET	GA	00.75	Relief	
1277	8	MALLET	H5	00.17	DBNInspect	
1278	8	MALLET	H6	00.25	DBNDayBrd Ch	
1279	8	MALLET	I5	00.42	LTInspect	
1280	8	MALLET	I6	00.50	LTDayBrd Ch	
1281	8	MALLET	I7	00.75	LTRecharge	
1282	8	MALLET	J5	00.75	LTInspect	
1283	8	MALLET	J6	01.50	LTDayBrd Ch	
1284	8	MALLET	J7	01.50	LTRecharge	
1285	8	MALLET	K5	01.50	LTInspect	
1286	8	MALLET	K6	03.00	LTDayBrd Ch	
1287	8	MALLET	K7	02.50	LTRecharge	
1288	8	MALLET	L1	00.33	1ADBNew Con	
1289	8	MALLET	L2	01.50	1ADBNew/Reb	
1290	8	MALLET	L3	00.66	1ADBNew/Repl	
1291	8	MALLET	L3-R	00.22	1ADBRemove	
1292	8	MALLET	L4	00.25	1ADBNew Reps	
1293	8	MALLET	M1	01.00	1ALTNew Con	
1294	8	MALLET	M2	02.00	1ALTRec/Reb	
1295	8	MALLET	M3	01.50	1ALTRem/Repl	
1296	8	MALLET	M3-R	00.50	1ALTRemove	
1297	8	MALLET	M4	00.50	1ALTMin Reps	
1298	8	MALLET	MA1A	00.33	NewCon: Wd DBN	
1299	8	MALLET	MA1B	01.50	RecReb: Wd DBN	
1300	8	MALLET	MA1C	00.67	RemRpl: Wd DBN	
1301	8	MALLET	MA1D	00.25	MinRep: Wd DBN	
1302	8	MALLET	MA3A	01.00	NewCon: 1P Wd LT	
1303	8	MALLET	MA3B	02.00	RecReb: 1P Wd LT	
1304	8	MALLET	MA3C	01.50	RemRpl: 1P Wd LT	
1305	8	MALLET	MA3D	00.50	MinRep: 1P Wd LT	
1306	8	MALLET	MA5A	02.00	NewCon: 3P Wd LT	
1307	8	MALLET	MA5B	03.00	RecReb: 3P Wd LT	
1308	8	MALLET	MA5C	03.00	RemRpl: 3P Wd LT	
1309	8	MALLET	MA5D	01.00	MinRep: 3P Wd LT	
1310	8	MALLET	MA7A	04.00	NewCon: 4P Wd LT	
1311	8	MALLET	MA7B	06.00	RecReb: 4P Wd LT	
1312	8	MALLET	MA7C	08.00	RemRpl: 4P Wd LT	
1313	8	MALLET	MA7D	01.50	MinRep: 4P Wd LT	
1314	8	MALLET	MABA	10.00	NewCon: 8P Wd LT	
1315	8	MALLET	MABB	15.00	RecReb: 8P Wd LT	
1316	8	MALLET	MABC	16.00	RemRpl: 8P Wd LT	
1317	8	MALLET	MABD	03.00	MinRep: 8P Wd LT	
1318	8	MALLET	N1	20.00	12ALTNew Con	
1319	8	MALLET	N2	24.00	12ALTRec/Reb	
1320	8	MALLET	N3	25.00	12ALTRem/Repl	
1321	8	MALLET	N3-R	08.33	12ALTRemove	
1322	8	MALLET	N4	04.00	12ALTMin Reps	
1323	8	MALLET	O1	01.50	2ALTNew Con	

	Dis- trict	Vessel Name	Code	in Hours	Description*	Service Time
1324	8	MALLET	O2	02.50	2ALTRec/Reb	
1325	8	MALLET	O3	02.25	2ALTRem/Repl	
1326	8	MALLET	O3-R	00.75	2ALTRemove	
1327	8	MALLET	O4	00.75	2ALTMin Reps	
1328	8	MALLET	Q1	01.50	2ALTNew Con	
1329	8	MALLET	Q2	02.50	2ALTRec/Reb	
1330	8	MALLET	Q3	02.25	2ALTRem/Repl	
1331	8	MALLET	Q3-R	00.75	2ALTRemove	
1332	8	MALLET	Q4	00.75	2ALTMin Reps	
1333	8	MALLET	R1	02.00	3ALTNew Con	
1334	8	MALLET	R2	03.00	3ALTRec/Reb	
1335	8	MALLET	R3	03.00	3ALTRem/Repl	
1336	8	MALLET	R3-R	01.00	3ALTRemove	
1337	8	MALLET	R4	01.00	3ALTMin Reps	
1338	8	MALLET	S1	05.00	4ALTNew Con	
1339	8	MALLET	S2	07.00	4ALTRec/Reb	
1340	8	MALLET	S3	09.00	4ALTRem/Repl	
1341	8	MALLET	S3-R	03.00	4ALTRemove	
1342	8	MALLET	S4	02.00	4ALTMin Reps	
1343	8	MALLET	T1	10.00	8ALTNew Con	
1344	8	MALLET	T2	15.00	8ALTRec/Reb	
1345	8	MALLET	T3	16.00	8ALTRem/Repl	
1346	8	MALLET	T3-R	05.33	8ALTRemove	
1347	8	MALLET	T4	03.00	8ALTMin Reps	
1348	8	MALLET	U4	00.25	0ADBNew Reps	
1349	8	MALLET	V4	00.50	0ALTMin Reps	
1350	8	MALLET	X1	10.00	8ALTNew Con	
1351	8	MALLET	X2	15.00	8ALTRec/Reb	
1352	8	MALLET	X3	16.00	8ALTRem/Repl	
1353	8	MALLET	X3-R	05.33	8ALTRemove	
1354	8	MALLET	X4	03.00	8ALTMin Reps	
1355	8	PANLICO	11	00.50	1ADBNew Con	
1356	8	PANLICO	12	00.75	1ADBRec/Reb	
1357	8	PANLICO	13	01.00	1ADBRem/Repl	
1358	8	PANLICO	13-R	00.33	1ADBRemove	
1359	8	PANLICO	14	00.25	1ADBMin Reps	
1360	8	PANLICO	21	00.50	1SDBNew Con	
1361	8	PANLICO	31	01.00	1ULTNew Con	
1362	8	PANLICO	32	01.33	1ULTRec/Reb	
1363	8	PANLICO	33	01.33	1ULTRem/Repl	
1364	8	PANLICO	33-R	00.44	1ULTRemove	
1365	8	PANLICO	34	00.50	1ULTMin Reps	
1366	8	PANLICO	41	01.75	1SLTNew Con	
1367	8	PANLICO	42	02.50	1SLTRec/Reb	
1368	8	PANLICO	43	02.50	1SLTRem/Repl	
1369	8	PANLICO	43-R	00.83	1SLTRemove	
1370	8	PANLICO	44	00.75	1SLTMin Reps	
1371	8	PANLICO	51	02.50	3ULTNew Con	
1372	8	PANLICO	52	03.00	3ULTRec/Reb	

Dis- trict	Vessel Name	Code	Service Time in Hours	Description*
1427	8 PAMICO	S3	14.00	4ALTRem/Repl
1428	8 PAMICO	S3-R	04.67	4ALTRemove
1429	8 PAMICO	S4	01.00	4ALTRem Repl
1430	8 PAMICO	T1	20.00	8ALTRem Con
1431	8 PAMICO	T2	30.00	8ALTRem/Reb
1432	8 PAMICO	T3	30.00	8ALTRem/Repl
1433	8 PAMICO	T3-R	10.00	8ALTRemove
1434	8 PAMICO	T4	03.00	8ALTRem Repl
1435	8 PAMICO	U4	00.25	0ADBNMIn Repl
1436	8 PAMICO	V4	00.63	0ALTRem Repl
1437	8 PAMICO	X1	20.00	8ALTRem Con
1438	8 PAMICO	X2	30.00	8ALTRem/Reb
1439	8 PAMICO	X3	30.00	8ALTRem/Repl
1440	8 PAMICO	X3-R	10.00	8ALTRemove
1441	8 PAMICO	X4	03.00	8ALTRem Repl
1442	8 SAGINAW	11	01.00	1ADBNMIn Con
1443	8 SAGINAW	12	01.25	1ADBNMIn/Reb
1444	8 SAGINAW	13	01.50	1ADBNMIn/Repl
1445	8 SAGINAW	13-R	00.50	1ADBNMIn Repl
1446	8 SAGINAW	14	00.20	1ADBNMIn Repl
1447	8 SAGINAW	21	02.50	1ADBNMIn Con
1448	8 SAGINAW	31	01.30	1ALTRem Con
1449	8 SAGINAW	32	01.50	1ALTRem/Reb
1450	8 SAGINAW	33	01.75	1ALTRem/Repl
1451	8 SAGINAW	33-R	00.58	1ALTRemove
1452	8 SAGINAW	34	00.30	1ALTRem Repl
1453	8 SAGINAW	41	04.00	1SLTRem Con
1454	8 SAGINAW	51	02.00	3ALTRem Con
1455	8 SAGINAW	52	03.00	3ALTRem/Reb
1456	8 SAGINAW	53	03.50	3ALTRem/Repl
1457	8 SAGINAW	53-R	01.17	3ALTRemove
1458	8 SAGINAW	54	01.00	3ALTRem Repl
1459	8 SAGINAW	91	16.00	4ALTRem Con
1460	8 SAGINAW	92	22.00	4ALTRem/Reb
1461	8 SAGINAW	93	24.00	4ALTRem/Repl
1462	8 SAGINAW	93-R	08.00	4ALTRemove
1463	8 SAGINAW	94	04.00	4ALTRem Repl
1464	8 SAGINAW	B1	00.50	1 (ULB)
1465	8 SAGINAW	B2	00.75	1M (ULB)
1466	8 SAGINAW	B3	00.75	1MR (ULB)
1467	8 SAGINAW	B4	00.75	1R (ULB)
1468	8 SAGINAW	D1	24.00	12ALTRem Con
1469	8 SAGINAW	D2	30.00	12ALTRem/Reb
1470	8 SAGINAW	D3	32.00	12ALTRem/Repl
1471	8 SAGINAW	D3-R	10.67	12ALTRemove
1472	8 SAGINAW	D4	10.00	12ALTRem Repl
1473	8 SAGINAW	F5	00.50	Inspect
1474	8 SAGINAW	F8	00.75	MoorIng
1475	8 SAGINAW	F9	00.25	Pos Check

Dis- trict	Vessel Name	Code	Service Time in Hours	Description*
1373	8 PAMICO	S3	04.00	3ALTRem/Repl
1374	8 PAMICO	S3-R	01.33	3ALTRemove
1375	8 PAMICO	S4	00.50	3ALTRem Repl
1376	8 PAMICO	T1	10.00	4ALTRem Con
1377	8 PAMICO	T2	12.00	4ALTRem/Reb
1378	8 PAMICO	T3	14.00	4ALTRem/Repl
1379	8 PAMICO	T3-R	04.67	4ALTRemove
1380	8 PAMICO	T4	01.00	4ALTRem Repl
1381	8 PAMICO	91	10.00	4ALTRem Con
1382	8 PAMICO	92	12.00	4ALTRem/Reb
1383	8 PAMICO	93	14.00	4ALTRem/Repl
1384	8 PAMICO	93-R	04.67	4ALTRemove
1385	8 PAMICO	94	01.00	4ALTRem Repl
1386	8 PAMICO	F5	00.33	Inspect
1387	8 PAMICO	F8	00.50	MoorIng
1388	8 PAMICO	F9	00.33	Pos Check
1389	8 PAMICO	FA	00.50	Relief
1390	8 PAMICO	L1	00.50	1ADBNMIn Con
1391	8 PAMICO	L2	00.75	1ADBNMIn/Reb
1392	8 PAMICO	L3	01.00	1ADBNMIn/Repl
1393	8 PAMICO	L3-R	00.33	1ADBNMIn Repl
1394	8 PAMICO	L4	00.25	1ADBNMIn Repl
1395	8 PAMICO	M1	01.38	1ALTRem Con
1396	8 PAMICO	M2	01.92	1ALTRem/Reb
1397	8 PAMICO	M3	01.92	1ALTRem/Repl
1398	8 PAMICO	M3-R	00.64	1ALTRemove
1399	8 PAMICO	M4	00.63	1ALTRem Repl
1400	8 PAMICO	O1	01.75	2ALTRem Con
1401	8 PAMICO	O2	02.33	2ALTRem/Reb
1402	8 PAMICO	O3	02.58	2ALTRem/Repl
1403	8 PAMICO	O3-R	00.86	2ALTRemove
1404	8 PAMICO	O4	00.63	2ALTRem Repl
1405	8 PAMICO	P1	01.75	2SLTRem Con
1406	8 PAMICO	P2	02.50	2SLTRem/Reb
1407	8 PAMICO	P3	02.50	2SLTRem/Repl
1408	8 PAMICO	P3-R	00.83	2SLTRemove
1409	8 PAMICO	P4	00.75	2SLTRem Repl
1410	8 PAMICO	Q1	01.75	2ALTRem Con
1411	8 PAMICO	Q2	02.17	2ALTRem/Reb
1412	8 PAMICO	Q3	02.67	2ALTRem/Repl
1413	8 PAMICO	Q3-R	00.89	2ALTRemove
1414	8 PAMICO	Q4	00.50	2ALTRem Repl
1415	8 PAMICO	R1	02.50	3ALTRem Con
1416	8 PAMICO	R2	03.00	3ALTRem/Reb
1417	8 PAMICO	R3	04.00	3ALTRem/Repl
1418	8 PAMICO	R3-R	01.33	3ALTRemove
1419	8 PAMICO	R4	00.50	3ALTRem Repl
1420	8 PAMICO	S1	10.00	4ALTRem Con
1421	8 PAMICO	S2	12.00	4ALTRem/Reb

Dis- trict	Vessel Name	Code	Service Time in Hours	Description*
1471	8 SAGINAW	FA	00.75	Relief
1472	8 SAGINAW	L1	01.75	1ADBNNew Con
1473	8 SAGINAW	L2	01.25	1ADBNRec/Reb
1474	8 SAGINAW	L3	01.50	1ADBNRem/Repl
1475	8 SAGINAW	L3-R	00.50	1ADBNRemove
1476	8 SAGINAW	L4	00.20	1ADBNMin Repl
1477	8 SAGINAW	M1	02.65	1ALTNew Con
1478	8 SAGINAW	M2	01.50	1ALTRec/Reb
1479	8 SAGINAW	M3	01.75	1ALTRem/Repl
1480	8 SAGINAW	M3-R	00.58	1ALTRemove
1481	8 SAGINAW	M4	00.30	1ALThIn Repl
1482	8 SAGINAW	N1	24.00	12ALTNew Con
1483	8 SAGINAW	N2	30.00	12ALTRec/Reb
1484	8 SAGINAW	N3	32.00	12ALTRem/Repl
1485	8 SAGINAW	N3-R	10.67	12ALTRemove
1486	8 SAGINAW	N4	10.00	12ALThIn Repl
1487	8 SAGINAW	O1	02.83	2ALTNew Con
1488	8 SAGINAW	O2	02.25	2ALTRec/Reb
1489	8 SAGINAW	O3	02.63	2ALTRem/Repl
1490	8 SAGINAW	O3-R	00.88	2ALTRemove
1491	8 SAGINAW	O4	00.65	2ALThIn Repl
1492	8 SAGINAW	P1	04.00	2SLTNew Con
1493	8 SAGINAW	Q1	01.65	2ULTNew Con
1494	8 SAGINAW	Q2	02.25	2ULTRec/Reb
1495	8 SAGINAW	Q3	02.63	2ULTRem/Repl
1496	8 SAGINAW	Q3-R	00.88	2ULTRemove
1497	8 SAGINAW	Q4	00.65	2ULTThIn Repl
1498	8 SAGINAW	R1	02.00	3ALTNew Con
1499	8 SAGINAW	R2	03.00	3ALTRec/Reb
1500	8 SAGINAW	R3	03.50	3ALTRem/Repl
1501	8 SAGINAW	R3-R	01.17	3ALTRemove
1502	8 SAGINAW	R4	01.00	3ALTThIn Repl
1503	8 SAGINAW	S1	16.00	4ALTNew Con
1504	8 SAGINAW	S2	22.00	4ALTRec/Reb
1505	8 SAGINAW	S3	24.00	4ALTRem/Repl
1506	8 SAGINAW	S3-R	08.00	4ALTRemove
1507	8 SAGINAW	S4	04.00	4ALTThIn Repl
1508	8 SAGINAW	T1	20.00	8ALTNew Con
1509	8 SAGINAW	T2	26.00	8ALTRec/Reb
1510	8 SAGINAW	T3	28.00	8ALTRem/Repl
1511	8 SAGINAW	T3-R	09.33	8ALTRemove
1512	8 SAGINAW	T4	08.00	8ALTThIn Repl
1513	8 SAGINAW	U4	00.20	OADBNMin Repl
1514	8 SAGINAW	V4	00.30	0ALTThIn Repl
1515	8 SAGINAW	X1	20.00	8ULTNew Con
1516	8 SAGINAW	X2	26.00	8ULTRec/Reb
1517	8 SAGINAW	X3	28.00	8ULTRem/Repl
1518	8 SAGINAW	X3-R	09.33	8ULTRemove
1519	8 SAGINAW	X4	08.00	8ULTThIn Repl

Dis- trict	Vessel Name	Code	Service Time in Hours	Description*
1520	8 WEDGE	11	00.50	1ADBNNew Con
1521	8 WEDGE	12	00.75	1ADBNRec/Reb
1522	8 WEDGE	13	00.75	1ADBNRem/Repl
1523	8 WEDGE	13-R	00.25	1ADBNRemove
1524	8 WEDGE	14	00.25	1ADBNMin Repl
1525	8 WEDGE	31	00.75	1ALTNew Con
1526	8 WEDGE	32	01.25	1ALTRec/Reb
1527	8 WEDGE	33	01.25	1ALTRem/Repl
1528	8 WEDGE	33-R	00.42	1ALTRemove
1529	8 WEDGE	34	00.50	1ALTThIn Repl
1530	8 WEDGE	51	02.00	3ULTNew Con
1531	8 WEDGE	52	02.50	3ULTRec/Reb
1532	8 WEDGE	53	02.50	3ULTRem/Repl
1533	8 WEDGE	53-R	00.83	3ULTRemove
1534	8 WEDGE	54	00.50	3ULTThIn Repl
1535	8 WEDGE	71	12.00	4ULTNew Con
1536	8 WEDGE	72	14.00	4ULTRec/Reb
1537	8 WEDGE	73	14.00	4ULTRem/Repl
1538	8 WEDGE	73-R	04.67	4ULTRemove
1539	8 WEDGE	74	01.00	4ULTThIn Repl
1540	8 WEDGE	91	12.00	4ULTNew Con
1541	8 WEDGE	92	14.00	4ULTRec/Reb
1542	8 WEDGE	93	14.00	4ULTRem/Repl
1543	8 WEDGE	93-R	04.67	4ULTRemove
1544	8 WEDGE	94	01.00	4ULTThIn Repl
1545	8 WEDGE	D1	20.00	12ULTNew Con
1546	8 WEDGE	D2	24.00	12ULTRec/Reb
1547	8 WEDGE	D3	24.00	12ULTRem/Repl
1548	8 WEDGE	D3-R	08.00	12ULTRemove
1549	8 WEDGE	D4	04.00	12ULTThIn Repl
1550	8 WEDGE	F5	00.33	Inspect
1551	8 WEDGE	F8	00.17	Mooring
1552	8 WEDGE	F9	00.33	Pos Check
1553	8 WEDGE	FA	00.17	Relief
1554	8 WEDGE	L1	00.50	1ADBNNew Con
1555	8 WEDGE	L2	00.75	1ADBNRec/Reb
1556	8 WEDGE	L3	00.75	1ADBNRem/Repl
1557	8 WEDGE	L3-R	00.25	1ADBNRemove
1558	8 WEDGE	L4	00.25	1ADBNMin Repl
1559	8 WEDGE	M1	00.75	1ALTNew Con
1560	8 WEDGE	M2	01.25	1ALTRec/Reb
1561	8 WEDGE	M3	01.25	1ALTRem/Repl
1562	8 WEDGE	M3-R	00.42	1ALTRemove
1563	8 WEDGE	M4	00.50	1ALTThIn Repl
1564	8 WEDGE	N1	20.00	12ALTNew Con
1565	8 WEDGE	N2	24.00	12ALTRec/Reb
1566	8 WEDGE	N3	24.00	12ALTRem/Repl
1567	8 WEDGE	N3-R	08.00	12ALTRemove
1568	8 WEDGE	N4	04.00	12ALTThIn Repl

Dis- trict	Vessel Name	Code	In Hours	Service Time	Description*
1569	8 WEDGE	01	01.38	2ALNew Con	
1570	8 WEDGE	02	01.88	2ALRec/Reb	
1571	8 WEDGE	03	01.88	2ALRec/Repl	
1572	8 WEDGE	03-R	00.63	2ALRemove	
1573	8 WEDGE	04	00.50	2ALMin Repl	
1574	8 WEDGE	01	01.38	2ALNew Con	
1575	8 WEDGE	02	01.88	2ALRec/Reb	
1576	8 WEDGE	03	01.88	2ALRec/Repl	
1577	8 WEDGE	03-R	00.63	2ALRemove	
1578	8 WEDGE	04	00.50	2ALMin Repl	
1579	8 WEDGE	R1	02.00	3ALNew Con	
1580	8 WEDGE	R2	02.50	3ALRec/Reb	
1581	8 WEDGE	R3	02.50	3ALRec/Repl	
1582	8 WEDGE	R3-R	00.83	3ALRemove	
1583	8 WEDGE	R4	00.50	3ALMin Repl	
1584	8 WEDGE	S1	12.00	4ALNew Con	
1585	8 WEDGE	S2	14.00	4ALRec/Reb	
1586	8 WEDGE	S3	14.00	4ALRec/Repl	
1587	8 WEDGE	S3-R	04.67	4ALRemove	
1588	8 WEDGE	S4	01.00	4ALMin Repl	
1589	8 WEDGE	T1	16.00	8ALNew Con	
1590	8 WEDGE	T2	20.00	8ALRec/Reb	
1591	8 WEDGE	T3	20.00	8ALRec/Repl	
1592	8 WEDGE	T3-R	06.67	8ALRemove	
1593	8 WEDGE	T4	04.00	8ALMin Repl	
1594	8 WEDGE	U4	00.25	00DBNMin Repl	
1595	8 WEDGE	V4	00.50	0ALMin Repl	
1596	8 WEDGE	X1	16.00	8ALNew Con	
1597	8 WEDGE	X2	20.00	8ALRec/Reb	
1598	8 WEDGE	X3	20.00	8ALRec/Repl	
1599	8 WEDGE	X3-R	06.67	8ALRemove	
1600	8 WEDGE	X4	04.00	8ALMin Repl	
1601	99 Fleet Average	11	00.71	10DBNNew Con	
1602	99 Fleet Average	12	01.29	10DBNRec/Reb	
1603	99 Fleet Average	13	01.09	10DBNRec/Repl	
1604	99 Fleet Average	13-R	00.33	10DBNRemove	
1605	99 Fleet Average	14	00.24	10DBNMin Repl	
1606	99 Fleet Average	21	01.13	10DBNNew Con	
1607	99 Fleet Average	22	01.99	10DBNRec/Reb	
1608	99 Fleet Average	23	02.27	10DBNRec/Repl	
1609	99 Fleet Average	23-R	00.81	10DBNRemove	
1610	99 Fleet Average	24	00.44	10DBNMin Repl	
1611	99 Fleet Average	31	01.29	10ALNew Con	
1612	99 Fleet Average	32	01.88	10ALRec/Reb	
1613	99 Fleet Average	33	01.91	10ALRec/Repl	
1614	99 Fleet Average	33-R	00.62	10ALRemove	
1615	99 Fleet Average	34	00.53	10ALMin Repl	
1616	99 Fleet Average	41	02.06	15LTNew Con	
1617	99 Fleet Average	42	02.84	15LTRec/Reb	

Dis- trict	Vessel Name	Code	In Hours	Service Time	Description*
1618	99 Fleet Average	43	03.13	15LTRec/Repl	
1619	99 Fleet Average	43-R	01.14	15LTRemove	
1620	99 Fleet Average	44	00.72	15LTMin Repl	
1621	99 Fleet Average	51	02.90	3MLNew Con	
1622	99 Fleet Average	52	04.06	3MLRec/Reb	
1623	99 Fleet Average	53	01.27	3MLRec/Repl	
1624	99 Fleet Average	53-R	01.37	3MLRemove	
1625	99 Fleet Average	54	00.76	3MLMin Repl	
1626	99 Fleet Average	61	05.35	3SLNew Con	
1627	99 Fleet Average	62	05.00	3SLRec/Reb	
1628	99 Fleet Average	63	06.95	3SLRec/Repl	
1629	99 Fleet Average	63-R	02.97	3SLRemove	
1630	99 Fleet Average	64	01.29	3SLMin Repl	
1631	99 Fleet Average	71	10.00	4MLNew Con	
1632	99 Fleet Average	72	12.53	4MLRec/Reb	
1633	99 Fleet Average	73	12.15	4MLRec/Repl	
1634	99 Fleet Average	73-R	04.22	4MLRemove	
1635	99 Fleet Average	74	01.66	4MLMin Repl	
1636	99 Fleet Average	81	07.40	4SLNew Con	
1637	99 Fleet Average	82	11.50	4SLRec/Reb	
1638	99 Fleet Average	83	11.00	4SLRec/Repl	
1639	99 Fleet Average	83-R	04.00	4SLRemove	
1640	99 Fleet Average	84	02.32	4SLMin Repl	
1641	99 Fleet Average	91	18.20	4MLNew Con	
1642	99 Fleet Average	92	22.69	4MLRec/Reb	
1643	99 Fleet Average	93	25.17	4MLRec/Repl	
1644	99 Fleet Average	93-R	09.01	4MLRemove	
1645	99 Fleet Average	94	02.31	4MLMin Repl	
1646	99 Fleet Average	A3-R	07.67	4SLRemove	
1647	99 Fleet Average	A5	01.44	NR	
1648	99 Fleet Average	A6	01.04	R	
1649	99 Fleet Average	C1	00.67	Sp	
1650	99 Fleet Average	C2	00.44	Fa	
1651	99 Fleet Average	C3	00.97	Sp	
1652	99 Fleet Average	C4	00.77	Fa	
1653	99 Fleet Average	D1	21.33	12MLNew Con	
1654	99 Fleet Average	D2	26.00	12MLRec/Reb	
1655	99 Fleet Average	D3	27.00	12MLRec/Repl	
1656	99 Fleet Average	D3-R	09.00	12MLRemove	
1657	99 Fleet Average	D4	06.00	12MLMin Repl	
1658	99 Fleet Average	F1	01.00	I	
1659	99 Fleet Average	F2	01.50	I	
1660	99 Fleet Average	F5	00.54	Inspect	
1661	99 Fleet Average	F8	00.76	Mooring	
1662	99 Fleet Average	F9	00.30	Pos Check	
1663	99 Fleet Average	FA	00.58	Relief	
1664	99 Fleet Average	G5	00.74	Inspect	
1665	99 Fleet Average	G7	01.20	Recharge	
1666	99 Fleet Average	G8	01.21	Mooring	

	Dis- trict	Vessel Name	Code	in Hours	Description*	Service Time
1667	99	Fleet Average	G9	00.30	Pos Check	
1668	99	Fleet Average	GA	00.92	Relief	
1669	99	Fleet Average	H5	00.16	DBN Inspct	
1670	99	Fleet Average	H6	00.22	DBN Daybrd Ch	
1671	99	Fleet Average	H5	00.46	LT Inspct	
1672	99	Fleet Average	I6	00.38	LT Daybrd Ch	
1673	99	Fleet Average	I7	00.88	LT Recharge	
1674	99	Fleet Average	J5	00.78	LT Inspct	
1675	99	Fleet Average	J6	01.55	LT Daybrd Ch	
1676	99	Fleet Average	J7	01.25	LT Recharge	
1677	99	Fleet Average	K5	01.00	LT Inspct	
1678	99	Fleet Average	K6	02.50	LT Daybrd Ch	
1679	99	Fleet Average	K7	01.75	LT Recharge	
1680	99	Fleet Average	L1	00.74	1ADBNew Con	
1681	99	Fleet Average	L2	01.27	1ADBNRec/Reb	
1682	99	Fleet Average	L3	01.30	1ADBNRem/Repl	
1683	99	Fleet Average	L3-R	00.43	1ADBNRemove	
1684	99	Fleet Average	L4	00.28	1ADBNMin Reps	
1685	99	Fleet Average	M1	01.38	1ALTNNew Con	
1686	99	Fleet Average	M2	02.06	1ALTRec/Reb	
1687	99	Fleet Average	M3	02.27	1ALTRem/Repl	
1688	99	Fleet Average	M3-R	00.76	1ALTRemove	
1689	99	Fleet Average	M4	00.54	1ALTNMin Reps	
1690	99	Fleet Average	M1	21.33	12ALTNNew Con	
1691	99	Fleet Average	M2	26.00	12ALTRec/Reb	
1692	99	Fleet Average	M3	27.00	12ALTRem/Repl	
1693	99	Fleet Average	M3-R	09.00	12ALTRemove	
1694	99	Fleet Average	M4	06.00	12ALTNMin Reps	
1695	99	Fleet Average	O1	02.16	2ALTNNew Con	
1696	99	Fleet Average	O2	02.82	2ALTRec/Reb	
1697	99	Fleet Average	O3	03.17	2ALTRem/Repl	
1698	99	Fleet Average	O3-R	01.06	2ALTRemove	
1699	99	Fleet Average	O4	00.70	2ALTNMin Reps	
1700	99	Fleet Average	P1	02.56	2SLTNNew Con	
1701	99	Fleet Average	P2	02.88	2SLTRec/Reb	
1702	99	Fleet Average	P3	03.88	2SLTRem/Repl	
1703	99	Fleet Average	P3-R	01.29	2SLTRemove	
1704	99	Fleet Average	P4	00.84	2SLTNMin Reps	
1705	99	Fleet Average	Q1	01.97	2ALTNNew Con	
1706	99	Fleet Average	Q2	02.79	2ALTRec/Reb	
1707	99	Fleet Average	Q3	02.87	2ALTRem/Repl	
1708	99	Fleet Average	Q3-R	00.96	2ALTRemove	
1709	99	Fleet Average	Q4	00.61	2ALTNMin Reps	
1710	99	Fleet Average	R1	03.13	3ALTNNew Con	
1711	99	Fleet Average	R2	03.85	3ALTRec/Reb	
1712	99	Fleet Average	R3	04.50	3ALTRem/Repl	
1713	99	Fleet Average	R3-R	01.50	3ALTRemove	
1714	99	Fleet Average	R4	00.92	3ALTNMin Reps	
1715	99	Fleet Average	S1	15.90	4ALTNNew Con	

	Dis- trict	Vessel Name	Code	in Hours	Description*	Service Time
1716	99	Fleet Average	S2	19.68	4ALTRec/Reb	
1717	99	Fleet Average	S3	21.06	4ALTRem/Repl	
1718	99	Fleet Average	S3-R	07.02	4ALTRemove	
1719	99	Fleet Average	S4	02.23	4ALTNMin Reps	
1720	99	Fleet Average	T1	30.78	8ALTNew Con	
1721	99	Fleet Average	T2	40.39	8ALTRec/Reb	
1722	99	Fleet Average	T3	39.60	8ALTRem/Repl	
1723	99	Fleet Average	T3-R	13.20	8ALTRemove	
1724	99	Fleet Average	T4	03.84	8ALTNMin Reps	
1725	99	Fleet Average	U4	00.28	0ADBMin Reps	
1726	99	Fleet Average	U4	00.54	0ALTMin Reps	
1727	99	Fleet Average	U4	00.50	0SLTNMin Reps	
1728	99	Fleet Average	X1	30.78	8ALTNew Con	
1729	99	Fleet Average	X2	40.39	8ALTRec/Reb	
1730	99	Fleet Average	X3	39.60	8ALTRem/Repl	
1731	99	Fleet Average	X3-R	13.20	8ALTRemove	
1732	99	Fleet Average	X4	03.84	8ALTNMin Reps	
1733	99	Fleet Average	Y1	10.00	4SLTNNew Con	
1734	99	Fleet Average	Y2	17.30	4SLTRec/Reb	
1735	99	Fleet Average	Y3	17.00	4SLTRem/Repl	
1736	99	Fleet Average	Y4	02.63	4SLTNMin Reps	
1737	99	TEMP	A1	00.00	LB Inspection	
1738	99	TEMP	A2	00.00	LB Inspct+Moor.	
1739	99	TEMP	A3	00.00	LB Insp+Moor+Chg	
1740	99	TEMP	A4	00.00	LB Insp+Charge	
1741	99	TEMP	A5	00.00	LB Moor+Relief	
1742	99	TEMP	A6	00.00	LB Relief	
1743	99	TEMP	B1	00.00	ULB Inspection (
1744	99	TEMP	B2	00.00	ULB Mooring+Insp	
1745	99	TEMP	B3	00.00	ULB Mooring+Relf	
1746	99	TEMP	B4	00.00	ULB Relief (ULB)	
1747	99	TEMP	F1	00.00	DBN Inspection	
1748	99	TEMP	F2	00.00	LT Inspection	
1749	99	TEMP	ST1A	00.00	NewCon: Wd DBN	
1750	99	TEMP	ST1B	00.00	RecReb: Wd DBN	
1751	99	TEMP	ST1C	00.00	Rempl: Wd DBN	
1752	99	TEMP	ST1D	00.00	MinRep: Wd DBN	
1753	99	TEMP	ST2A	00.00	NewCon: Stl DBN	
1754	99	TEMP	ST2B	00.00	RecReb: Stl DBN	
1755	99	TEMP	ST2C	00.00	Rempl: Stl DBN	
1756	99	TEMP	ST2D	00.00	MinRep: Stl DBN	
1757	99	TEMP	ST3A	00.00	NewCon: 1P Wd LT	
1758	99	TEMP	ST3B	00.00	RecReb: 1P Wd LT	
1759	99	TEMP	ST3C	00.00	Rempl: 1P Wd LT	
1760	99	TEMP	ST3D	00.00	MinRep: 1P Wd LT	
1761	99	TEMP	ST4A	00.00	NewCon: 1P Stl LT	
1762	99	TEMP	ST4B	00.00	RecReb: 1P Stl LT	
1763	99	TEMP	ST4C	00.00	Rempl: 1P Stl LT	
1764	99	TEMP	ST4D	00.00	MinRep: 1P Stl LT	

* Key to Description

1408MMin Reps
abcccccccccccc

- a: Number of Piles
b: Composition
Y = Wood
S = Steel
C = Concrete
A = Average
c: Structure Type
DBM = Daybeacon
LT = Light
d: Action Performed
New Con: New Construction
Min Reps: Minor Repairs
Rec/Reb: Recover & Rebuild
Rem/Repl: Remove & Replace
Remove: Remove

Dis- trict	Vessel Name	Code	in Hours	Description*	Se-vice Time
1765	99 TEMP	ST5A	00.00	NewCon: 3p Ud LT	
1766	99 TEMP	ST5B	00.00	RecReb: 1p Stl LT	
1767	99 TEMP	ST5C	00.00	RemPl: 3p Ud LT	
1768	99 TEMP	ST5D	00.00	MinRep: 3p Ud LT	
1769	99 TEMP	ST6A	00.00	NewCon: 3p Stl LT	
1770	99 TEMP	ST6B	00.00	RecReb: 3p Stl LT	
1771	99 TEMP	ST6C	00.00	RemPl: 3p Stl LT	
1772	99 TEMP	ST6D	00.00	MinRep: 3p Stl LT	
1773	99 TEMP	ST7A	00.00	NewCon: 4p Ud LT	
1774	99 TEMP	ST7B	00.00	RecReb: 4p Ud LT	
1775	99 TEMP	ST7C	00.00	RemPl: 4p Ud LT	
1776	99 TEMP	ST7D	00.00	MinRep: 4p Ud LT	
1777	99 TEMP	ST8A	00.00	NewCon: 4p Stl LT	
1778	99 TEMP	ST8B	00.00	RecReb: 4p Stl LT	
1779	99 TEMP	ST8C	00.00	RemPl: 4p Stl LT	
1780	99 TEMP	ST8D	00.00	MinRep: 4p Stl LT	
1781	99 TEMP	ST9A	00.00	NewCon: 4p Ud Rg	
1782	99 TEMP	ST9B	00.00	RecReb: 4p Ud Rg	
1783	99 TEMP	ST9C	00.00	RemPl: 4p Ud Rg	
1784	99 TEMP	ST9D	00.00	MinRep: 4p Ud Rg	
1785	99 TEMP	STAA	00.00	NewCon: 4p Stl Rg	
1786	99 TEMP	STAB	00.00	RecReb: 4p Stl Rg	
1787	99 TEMP	STAD	00.00	RemPl: 4p Stl Rg	
1788	99 TEMP	STAD	00.00	MinRep: 4p Stl Rg	
1789	99 TEMP	ST8A	00.00	NewCon: 8p Ud Rg	
1790	99 TEMP	ST8B	00.00	RecReb: 8p Ud Rg	
1791	99 TEMP	ST8C	00.00	RemPl: 8p Ud Rg	
1792	99 TEMP	ST8D	00.00	MinRep: 8p Ud Rg	
1793	99 TEMP	STCA	00.00	NewCon: 8p Stl Rg	
1794	99 TEMP	STCB	00.00	RecReb: 8p Stl Rg	
1795	99 TEMP	STCC	00.00	RemPl: 8p Stl Rg	
1796	99 TEMP	STCD	00.00	MinRep: 8p Stl Rg	
1797	99 TEMP	STDA	00.00	NewCon: 12p Ud Rg	
1798	99 TEMP	STDB	00.00	RecReb: 12p Ud Rg	
1799	99 TEMP	STDC	00.00	RemPl: 12p Ud Rg	
1800	99 TEMP	STDD	00.00	MinRep: 12p Ud Rg	
1801	99 TEMP	STEA	00.00	NewCon: 12p St Rg	
1802	99 TEMP	STEB	00.00	RecReb: 12p St Rg	
1803	99 TEMP	STEC	00.00	RemPl: 12p St Rg	
1804	99 TEMP	STED	00.00	MinRep: 12p St Rg	
1805	99 TEMP	STFA	00.00	NewCon: 1p Con LT	
1806	99 TEMP	STFB	00.00	RecReb: 1p Con LT	
1807	99 TEMP	STFC	00.00	RemPl: 1p Con LT	
1808	99 TEMP	STFD	00.00	MinRep: 1p Con LT	
1809	99 TEMP	STGA	00.00	NewCon: 5p Stl LT	
1810	99 TEMP	STGB	00.00	RecReb: 5p Stl LT	
1811	99 TEMP	STGC	00.00	RemPl: 5p Stl LT	
1812	99 TEMP	STGD	00.00	MinRep: 5p Stl LT	

APPENDIX C

DESCRIPTION OF DSS ONE-PAGE SUMMARY SHEETS

APPENDIX C. LAYOUT OF DSS 1-PAGE SUMMARY SHEET

Time report generated
date report generated

ATON SERVICE FORCE MIX DSS

vessel & report #

VESSEL SUMMARY REPORT

=====

Platform Characteristics

- vessel class and name
- Homeport: city and state
- average transit speed: from survey
- maximum cruise length: from survey
- work day: from survey
- Prep/Deprep time: from survey (minimum minutes between aids - WLICs =15)
- Dispatch: date of first trip (1/1/93 for derived WLIC log, all aids last serviced in 1992 will be serviced)
(Window size: size of service days window, Step size: number of days between vessel trips) (a Window Size, Step Size of 1,1 will result in the DSS servicing the aids within +/- 1 or 2 days of actual dates)

Summary Statistics

Total Nav aids assigned	=	number of aids assigned (includes port)
Total Nav aids serviced	=	number of aids visited by DSS
Total trips	=	generated by DSS
Underway days	=	total calendar days tender was out
Avg buoys / trip	=	calculated
Avg underway days / trip	=	calculated
Total transit time	=	sum of DSS trip routes
Total service time	=	sum of required aid servicing times
Total idle time	=	sum of overnight time away from port
Total time	=	sum of above three times
Total short transits	=	inter-navaid trip times that were < prep/deprep time
Total length of short trips	=	time that was expended by DSS on those trips
Additional prep/deprep time	=	additional time needed to = prep-deprep time
Avg service time / navaid	=	calculated
Avg transit time / navaid	=	calculated
Avg total time / navaid	=	calculated
Total ATON hours used	=	Sum Total of all hours
Historical ATON hours used	=	AOPS avg. of Underway and Hi-Readiness Hours

APPENDIX D

DSS RESULTS FOR THE CONSTRUCTION LOG FILE

Table of Contents

DISTRICT 5	
KENNEBEC	D-1
PRIMROSE	D-2
SLEDGE	D-3
 DISTRICT 7	
RAMBLER	D-4
HAMMER	D-5
SMILAX	D-6
HUDSON	D-7
VISE	D-8
 DISTRICT 8	
ANVIL	D-9
MALLET	D-10
CLAMP	D-11
HATCHET	D-12
AXE	D-13
SAGINAW	D-14
PAMLICO	D-15
WEDGE	D-16

10:38:2

Tuesday 3/22/1994

ATON SERVICE FORCE MIX DSS

KENNEBC3.REP

VESSEL SUMMARY REPORT

=====

Platform Characteristics

- WLIC KENNEBEC
- Homeport PORTSMOUTH, VA
- 8 knot average transit speed
- 120 hour maximum cruise length
- work day is 7:00 to 19:00
- Prep/Deprep time 0:15
- Dispatch Friday 1/1/1993 at 7:00
- (Window size = 7 days, Step size = 7 days)

Summary Statistics

Total Nav aids assigned	=	77	(0	Seasonal)
Total Nav aids serviced	=	76	(0	Seasonal)
Total trips	=	26			
Underway days	=	39			
Avg buoys / trip	=	2.9			
Avg underway days / trip	=	1.5			
Total transit time	=	349:58			
Total service time	=	90:45			
Total idle time (not added)	=	95:47			
Total time			=	440:43	

Total short transits	=	33			
Total length of short trips	=	3:20			
Additional prep/deprep time	=			4:55	

Avg service time / nav aid	=	1:12			
Avg transit time / nav aid	=	4:40			
Avg total time / nav aid	=	5:52			

Total ATON hours used = 445:38

=====

Historical ATON hours used = 1703:00

=====

10:38:11

Tuesday 3/22/1994

ATON SERVICE FORCE MIX DSS

PRIMROS4.REP

VESSEL SUMMARY REPORT

=====

Platform Characteristics

- WLIC PRIMROSE
- Homeport ATLANTIC BEACH, NC
- 8.5 knot average transit speed
- 120 hour maximum cruise length
- work day is 7:00 to 19:00
- Prep/Deprep time 0:15
- Dispatch Friday 1/1/1993 at 7:00
(Window size = 7 days, Step size = 7 days)

Summary Statistics

Total Nav aids assigned	= 138	(0 Seasonal)	
Total Nav aids serviced	= 137	(0 Seasonal)	
Total trips	= 37		
Underway days	= 74		
Avg buoys / trip	= 3.7		
Avg underway days / trip	= 2.0		
Total transit time	= 814:48		
Total service time	= 158:46		
Total idle time (not added)	= 184:23		
Total time		= 973:34	

Total short transits	= 40		
Total length of short trips	= 4:15		
Additional prep/deprep time		= 5:45	

Avg service time / nav aid	= 1:10		
Avg transit time / nav aid	= 5:59		
Avg total time / nav aid	= 7:09		

Total ATON hours used = 979:19
=====

Historical ATON hours used = 1335:00
=====

10:37:53
Tuesday 3/22/1994

ATON SERVICE FORCE MIX DSS

SLEDGE5.REP

VESSEL SUMMARY REPORT

Platform Characteristics

- WLIC SLEDGE
- Homeport BALTIMORE, MD
- 7 knot average transit speed
- 120 hour maximum cruise length
- work day is 7:00 to 19:00
- Prep/Deprep time 0:15
- Dispatch Friday 1/1/1993 at 7:00
(Window size = 7 days, Step size = 7 days)

Summary Statistics

Total Nav aids assigned	=	50	(0 Seasonal)	
Total Nav aids serviced	=	49	(0 Seasonal)	
Total trips	=	19		
Underway days	=	41		
Avg buoys / trip	=	2.6		
Avg underway days / trip	=	2.2		
Total transit time	=	488:57		
Total service time	=	53:31		
Total idle time (not added)	=	73:25		
Total time			=	542:28

Total short transits	=	11		
Total length of short trips	=	0:48		
Additional prep/deprep time	=			1:57

Avg service time / nav aid	=	1:06		
Avg transit time / nav aid	=	10:01		
Avg total time / nav aid	=	11:07		

Total ATON hours used = 544:25
=====

Historical ATON hours used = 1019:00
=====

15:0:41

Tuesday 3/22/1994

ATON SERVICE FORCE MIX DSS

rambler7.REP

VESSEL SUMMARY REPORT

Platform Characteristics

- WLIC RAMBLER
- Homeport CHARLESTON, SC
- 8 knot average transit speed
- 120 hour maximum cruise length
- work day is 7:00 to 19:00
- Prep/Deprep time 0:15
- Dispatch Friday 1/1/1993 at 7:00
(Window size = 7 days, Step size = 7 days)

Summary Statistics

Total Navaid assigned	=	55	(0 Seasonal)	
Total Navaid serviced	=	54	(0 Seasonal)	
Total trips	=	26		
Underway days	=	43		
Avg buoys / trip	=	2.1		
Avg underway days / trip	=	1.7		
Total transit time	=	358:45		
Total service time	=	98:38		
Total idle time (not added)	=	81:25		
Total time			=	457:23

Total short transits	=	9		
Total length of short trips	=	0:18		
Additional prep/deprep time	=		=	1:57

Avg service time / navaid	=	1:50		
Avg transit time / navaid	=	6:41		
Avg total time / navaid	=	8:30		

Total ATON hours used = 459:20
=====

Historical ATON hours used = 1200:00
=====

15:39:14
Friday 3/4/1994

ATON SERVICE FORCE MIX DSS

hammer2.REP

VESSEL SUMMARY REPORT

Platform Characteristics

- WLIC HAMMER
- Homeport MAYPORT, FL
- 7 knot average transit speed
- 120 hour maximum cruise length
- work day is 7:00 to 19:00
- Prep/Deprep time 0:15
- Dispatch Friday 1/1/1993 at 7:00
(Window size = 7 days, Step size = 7 days)

Summary Statistics

Total Navaid assigned	=	62	(0 Seasonal)	
Total Navaid serviced	=	61	(0 Seasonal)	
Total trips	=	28		
Underway days	=	54		
Avg buoys / trip	=	2.2		
Avg underway days / trip	=	1.9		
Total transit time	=	616:37		
Total service time	=	91:41		
Total idle time (not added)	=	112:27		
Total time			=	708:18

Total short transits	=	7		
Total length of short trips	=	0:20		
Additional prep/deprep time	=		=	1:25

Avg service time / navaid	=	1:30		
Avg transit time / navaid	=	10:08		
Avg total time / navaid	=	11:38		

Total ATON hours used = 709:43
=====

Historical ATON hours used = 1426:00
=====

15:39:7
Friday 3/4/1994

ATON SERVICE FORCE MIX DSS

smilax3.REP

VESSEL SUMMARY REPORT

=====

Platform Characteristics

- WLIC SMILAX
- Homeport BRUNSWICK, GA
- 8 knot average transit speed
- 120 hour maximum cruise length
- work day is 7:00 to 19:00
- Prep/Deprep time 0:15
- Dispatch Friday 1/1/1993 at 7:00
(Window size = 7 days, Step size = 7 days)

Summary Statistics

Total Nav aids assigned	=	53	(0 Seasonal)	
Total Nav aids serviced	=	52	(0 Seasonal)	
Total trips	=	17		
Underway days	=	27		
Avg buoys / trip	=	3.1		
Avg underway days / trip	=	1.6		
Total transit time	=	205:54		
Total service time	=	93:30		
Total idle time (not added)	=	77:30		
Total time			=	299:24

Total short transits	=	15		
Total length of short trips	=	0:54		
Additional prep/deprep time			=	2:51

Avg service time / nav aid	=	1:48		
Avg transit time / nav aid	=	4:01		
Avg total time / nav aid	=	5:49		

Total ATON hours used = 302:16
=====

Historical ATON hours used = 2403:00
=====

10:19:27

Tuesday 3/22/1994

ATON SERVICE FORCE MIX DSS

hudson15.REP

VESSEL SUMMARY REPORT

Platform Characteristics

- WLIC HUDSON
- Homeport MIAMI, FL
- 6.5 knot average transit speed
- 120 hour maximum cruise length
- work day is 7:00 to 19:00
- Prep/Deprep time 0:15
- Dispatch Friday 1/1/1993 at 7:00
(Window size = 7 days, Step size = 7 days)

Summary Statistics

Total Nav aids assigned	= 109	(0 Seasonal)	
Total Nav aids serviced	= 108	(0 Seasonal)	
Total trips	= 33		
Underway days	= 72		
Avg buoys / trip	= 3.3		
Avg underway days / trip	= 2.2		
Total transit time	= 888:00		
Total service time	= 199:24		
Total idle time (not added)	= 191:56		
Total time		= 1087:24	

Total short transits	= 31		
Total length of short trips	= 2:46		
Additional prep/deprep time		= 4:59	

Avg service time / navaid	= 1:51		
Avg transit time / navaid	= 8:16		
Avg total time / navaid	= 10:07		

Total ATON hours used = 1092:23
=====

Historical ATON hours used = 1763:00
=====

15:39:35
Friday 3/4/1994

ATON SERVICE FORCE MIX DSS

vis2.REP

VESSEL SUMMARY REPORT

Platform Characteristics

- WLIC VISE
- Homeport ST PETERSBURG, FL
- 7 knot average transit speed
- 120 hour maximum cruise length
- work day is 7:00 to 19:00
- Prep/Deprep time 0:15
- Dispatch Friday 1/1/1993 at 7:00
(Window size = 7 days, Step size = 7 days)

Summary Statistics

Total Navaid assigned	= 141	(0 Seasonal)	
Total Navaid serviced	= 140	(0 Seasonal)	
Total trips	= 39		
Underway days	= 74		
Avg buoys / trip	= 3.6		
Avg underway days / trip	= 1.9		
Total transit time	= 680:38		
Total service time	= 248:50		
Total idle time (not added)	= 194:40		
Total time		= 929:27	

Total short transits	= 40		
Total length of short trips	= 2:05		
Additional prep/deprep time		= 7:55	

Avg service time / navaid	= 1:47		
Avg transit time / navaid	= 4:55		
Avg total time / navaid	= 6:42		

Total ATON hours used = 937:22
=====

Historical ATON hours used = 1660:00
=====

15:41:34
Friday 3/4/1994

ATON SERVICE FORCE MIX DSS

anvil3.REP

VESSEL SUMMARY REPORT

Platform Characteristics

- WLIC ANVIL
- Homeport CORPUS CHRISTI, TX
- 7 knot average transit speed
- 120 hour maximum cruise length
- work day is 7:00 to 19:00
- Prep/Deprep time 0:15
- Dispatch Friday 1/1/1993 at 7:00
(Window size = 7 days, Step size = 7 days)

Summary Statistics

Total Nav aids assigned	=	73	(0 Seasonal)
Total Nav aids serviced	=	72	(0 Seasonal)
Total trips	=	24	
Underway days	=	43	
Avg buoys / trip	=	3.0	
Avg underway days / trip	=	1.8	
Total transit time	=	489:54	
Total service time	=	84:35	
Total idle time (not added)	=	178:34	
Total time			= 574:29

Total short transits	=	10	
Total length of short trips	=	1:24	
Additional prep/deprep time	=		1:06

Avg service time / nav aid	=	1:10	
Avg transit time / nav aid	=	6:49	
Avg total time / nav aid	=	8:00	

Total ATON hours used = 575:35
=====

Historical ATON hours used = 1512:00
=====

15:44:6

Friday 3/4/1994

ATON SERVICE FORCE MIX DSS

mallet16.REP

VESSEL SUMMARY REPORT

Platform Characteristics

- WLIC MALLET
- Homeport CORPUS CHRISTI, TX
- 6 knot average transit speed
- 120 hour maximum cruise length
- work day is 7:00 to 19:00
- Prep/Deprep time 0:15
- Dispatch Friday 1/1/1993 at 7:00
(Window size = 7 days, Step size = 7 days)

Summary Statistics

Total Navaid assigned	=	63	(0 Seasonal)	
Total Navaid serviced	=	62	(0 Seasonal)	
Total trips	=	28		
Underway days	=	49		
Avg buoys / trip	=	2.2		
Avg underway days / trip	=	1.8		
Total transit time	=	515:43		
Total service time	=	94:38		
Total idle time (not added)	=	96:19		
Total time			=	610:21

Total short transits	=	5		
Total length of short trips	=	0:36		
Additional prep/deprep time	=		=	0:39

Avg service time / navaid	=	1:32		
Avg transit time / navaid	=	8:20		
Avg total time / navaid	=	9:51		

Total ATON hours used = 611:00
=====

Historical ATON hours used = 1845:00
=====

15:41:3

Friday 3/4/1994

ATON SERVICE FORCE MIX DSS

clamp3.REP

VESSEL SUMMARY REPORT

Platform Characteristics

- WLIC CLAMP
- Homeport GALVESTON, TX
- 7 knot average transit speed
- 120 hour maximum cruise length
- work day is 7:00 to 19:00
- Prep/Deprep time 0:15
- Dispatch Friday 1/1/1993 at 7:00
(Window size = 7 days, Step size = 7 days)

Summary Statistics

Total Navaids assigned	= 147	(0 Seasonal)
Total Navaids serviced	= 146	(0 Seasonal)
Total trips	= 39	
Underway days	= 64	
Avg buoys / trip	= 3.7	
Avg underway days / trip	= 1.6	
Total transit time	= 375:18	
Total service time	= 424:07	
Total idle time (not added)	= 137:30	
Total time		= 799:25

Total short transits	= 42	
Total length of short trips	= 4:39	
Additional prep/deprep time		= 5:51

Avg service time / navaid	= 2:54	
Avg transit time / navaid	= 2:37	
Avg total time / navaid	= 5:31	

Total ATON hours used = 805:16
=====

Historical ATON hours used = 1328:00
=====

15:41:22
Friday 3/4/1994

ATON SERVICE FORCE MIX DSS

hatchet2.REP

VESSEL SUMMARY REPORT

=====

Platform Characteristics

- WLIC HATCHET
- Homeport GALVESTON, TX
- 7 knot average transit speed
- 120 hour maximum cruise length
- work day is 7:00 to 19:00
- Prep/Deprep time 0:15
- Dispatch Friday 1/1/1993 at 7:00
(Window size = 7 days, Step size = 7 days)

Summary Statistics

Total Navaids assigned	=	75	(0 Seasonal)
Total Navaids serviced	=	74	(0 Seasonal)
Total trips	=	27	
Underway days	=	47	
Avg buoys / trip	=	2.7	
Avg underway days / trip	=	1.7	
Total transit time	=	565:59	
Total service time	=	145:47	
Total idle time (not added)	=	137:37	
Total time			= 711:47

Total short transits	=	11	
Total length of short trips	=	1:16	
Additional prep/deprep time			= 1:29

Avg service time / navaid	=	1:58	
Avg transit time / navaid	=	7:40	
Avg total time / navaid	=	9:38	

Total ATON hours used = 713:16
=====

Historical ATON hours used = 1370:00
=====

15:39:49
Friday 3/4/1994

ATON SERVICE FORCE MIX DSS

axe3.REP

VESSEL SUMMARY REPORT

Platform Characteristics

- WLIC AXE
- Homeport MOBILE, AL
- 7 knot average transit speed
- 120 hour maximum cruise length
- work day is 7:00 to 19:00
- Prep/Deprep time 0:15
- Dispatch Friday 1/1/1993 at 7:00
(Window size = 7 days, Step size = 7 days)

Summary Statistics

Total Nav aids assigned	=	81	(0 Seasonal)	
Total Nav aids serviced	=	80	(0 Seasonal)	
Total trips	=	20		
Underway days	=	58		
Avg buoys / trip	=	4.0		
Avg underway days / trip	=	2.9		
Total transit time	=	793:50		
Total service time	=	117:11		
Total idle time (not added)	=	179:56		
Total time			=	911:01

Total short transits	=	12		
Total length of short trips	=	0:53		
Additional prep/deprep time	=			2:07

Avg service time / nav aid	=	1:28		
Avg transit time / nav aid	=	9:57		
Avg total time / nav aid	=	11:25		

Total ATON hours used = 913:08
=====

Historical ATON hours used = 1658:00
=====

15:40:3

Friday 3/4/1994

ATON SERVICE FORCE MIX DSS

saginaw3.REP

VESSEL SUMMARY REPORT

=====

Platform Characteristics

- WLIC SAGINAW
- Homeport MOBILE, AL
- 8 knot average transit speed
- 120 hour maximum cruise length
- work day is 7:00 to 19:00
- Prep/Deprep time 0:15
- Dispatch Friday 1/1/1993 at 7:00
(Window size = 7 days, Step size = 7 days)

Summary Statistics

Total Navaid assigned	= 176	(0 Seasonal)	
Total Navaid serviced	= 175	(0 Seasonal)	
Total trips	= 32		
Underway days	= 70		
Avg buoys / trip	= 5.5		
Avg underway days / trip	= 2.2		
Total transit time	= 576:43		
Total service time	= 319:40		
Total idle time (not added)	= 242:30		
Total time		= 896:23	

Total short transits	= 37		
Total length of short trips	= 4:08		
Additional prep/deprep time		= 5:07	

Avg service time / navaid	= 1:50		
Avg transit time / navaid	= 3:19		
Avg total time / navaid	= 5:09		

Total ATON hours used = 901:30
=====

Historical ATON hours used = 2248:00
=====

15:40:47

Friday 3/4/1994

ATON SERVICE FORCE MIX DSS

pamlico3.REP

VESSEL SUMMARY REPORT

=====

Platform Characteristics

- WLIC PAMLICO
- Homeport NEW ORLEANS, LA
- 8 knot average transit speed
- 120 hour maximum cruise length
- work day is 7:00 to 19:00
- Prep/Deprep time 0:15
- Dispatch Friday 1/1/1993 at 7:00
(Window size = 7 days, Step size = 7 days)

Summary Statistics

Total Navaid assigned	= 108	(0 Seasonal)	
Total Navaid serviced	= 107	(0 Seasonal)	
Total trips	= 26		
Underway days	= 55		
Avg buoys / trip	= 4.1		
Avg underway days / trip	= 2.1		
Total transit time	= 728:34		
Total service time	= 132:39		
Total idle time (not added)	= 249:20		
Total time		= 861:13	

Total short transits	= 27		
Total length of short trips	= 2:12		
Additional prep/deprep time		= 4:33	

Avg service time / navaid	= 1:14		
Avg transit time / navaid	= 6:51		
Avg total time / navaid	= 8:05		

Total ATON hours used = 865:46
=====

Historical ATON hours used = 1956:00
=====

10:19:51
Tuesday 3/22/1994

ATON SERVICE FORCE MIX DSS

wedge4.REP

VESSEL SUMMARY REPORT

Platform Characteristics

- WLIC WEDGE
- Homeport NEW ORLEANS, LA
- 7 knot average transit speed
- 120 hour maximum cruise length
- work day is 7:00 to 19:00
- Prep/Deprep time 0:15
- Dispatch Friday 1/1/1993 at 7:00
(Window size = 7 days, Step size = 7 days)

Summary Statistics

Total Nav aids assigned	=	92	(0 Seasonal)	
Total Nav aids serviced	=	91	(0 Seasonal)	
Total trips	=	36		
Underway days	=	64		
Avg buoys / trip	=	2.5		
Avg underway days / trip	=	1.8		
Total transit time	=	625:57		
Total service time	=	88:59		
Total idle time (not added)	=	121:12		
Total time			=	714:56

Total short transits	=	24		
Total length of short trips	=	2:21		
Additional prep/deprep time			=	3:39

Avg service time / nav aid	=	0:59		
Avg transit time / nav aid	=	6:55		
Avg total time / nav aid	=	7:54		

Total ATON hours used = 718:35
=====

Historical ATON hours used = 927:00
=====

APPENDIX E

DSS RESULTS FOR COMBINED WLICS

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10:53:23
Tuesday 3/22/1994

ATON SERVICE FORCE MIX DSS

primros5.REP

VESSEL SUMMARY REPORT

Platform Characteristics

- WLIC PRIMROSE/KENNEBEC
- Homeport ATLANTIC BEACH, NC
- 8.5 knot average transit speed
- 120 hour maximum cruise length
- work day is 7:00 to 19:00
- Prep/Deprep time 0:15
- Dispatch Friday 1/1/1993 at 7:00
(Window size = 7 days, Step size = 7 days)

Summary Statistics

Total Nav aids assigned	= 141	(0 Seasonal)	
Total Nav aids serviced	= 140	(0 Seasonal)	
Total trips	= 36		
Underway days	= 87		
Avg buoys / trip	= 3.9		
Avg underway days / trip	= 2.4		
Total transit time	= 1123:35		
Total service time	= 167:32		
Total idle time (not added)	= 201:48		
Total time			= 1291:07
Total short transits	= 40		
Total length of short trips	= 4:31		
Additional prep/deprep time			= 5:29
Avg service time / nav aid	= 1:12		
Avg transit time / nav aid	= 8:04		
Avg total time / nav aid	= 9:16		

Total ATON hours used = 1296:36
=====

Historical ATON hours used = 1500:00
=====

10:53:10

Tuesday 3/22/1994

ATON SERVICE FORCE MIX DSS

sledge6.REF

VESSEL SUMMARY REPORT

Platform Characteristics

- WLIC SLEDGE/KENNEBEC
- Homeport BALTIMORE, MD
- 7 knot average transit speed
- 120 hour maximum cruise length
- work day is 7:00 to 19:00
- Prep/Deprep time 0:15
- Dispatch Friday 1/1/1993 at 7:00
(Window size = 7 days, Step size = 7 days)

Summary Statistics

Total Navaid assigned	= 123	(0 Seasonal)	
Total Navaid serviced	= 122	(0 Seasonal)	
Total trips	= 30		
Underway days	= 75		
Avg buoys / trip	= 4.1		
Avg underway days / trip	= 2.5		
Total transit time	= 1079:30		
Total service time	= 113:21		
Total idle time (not added)	= 214:48		
Total time		= 1192:51	

Total short transits	= 42		
Total length of short trips	= 3:37		
Additional prep/deprep time		= 6:53	

Avg service time / navaid	= 0:56		
Avg transit time / navaid	= 8:54		
Avg total time / navaid	= 9:50		

Total ATON hours used = 1199:44
=====

Historical ATON hours used = 1500:00
=====

10:56:56

Monday 4/11/1994

ATON SERVICE FORCE MIX DSS

ramblr13.REP

VESSEL SUMMARY REPORT

Platform Characteristics

- WLIC RAMBLER/SMILAX
- Homeport CHARLESTON, SC
- 8 knot average transit speed
- 120 hour maximum cruise length
- work day is 7:00 to 19:00
- Prep/Deprep time 0:15
- Dispatch Friday 1/1/1993 at 7:00
(Window size = 7 days, Step size = 7 days)

Summary Statistics

Total Navaid assigned	=	72	(0 Seasonal)	
Total Navaid serviced	=	71	(0 Seasonal)	
Total trips	=	32		
Underway days	=	60		
Avg buoys / trip	=	2.2		
Avg underway days / trip	=	1.9		
Total transit time	=	576:33		
Total service time	=	148:08		
Total idle time (not added)	=	138:56		
Total time			=	724:40

Total short transits	=	10		
Total length of short trips	=	0:27		
Additional prep/deprep time			=	2:03

Avg service time / navaid	=	2:05		
Avg transit time / navaid	=	8:09		
Avg total time / navaid	=	10:14		

Total ATON hours used = 726:44
=====

Historical ATON hours used = 1500:00
=====

10:54:13
Monday 4/11/1994

ATON SERVICE FORCE MIX DSS

hammer6.REP

VESSEL SUMMARY REPORT

Platform Characteristics

- WLIC HAMMER/SMILAX
- Homeport MAYPORT, FL
- 7 knot average transit speed
- 120 hour maximum cruise length
- work day is 7:00 to 19:00
- Prep/Deprep time 0:15
- Dispatch Friday 1/1/1993 at 7:00
(Window size = 7 days, Step size = 7 days)

Summary Statistics

Total Navaid assigned	=	97	(0 Seasonal)	
Total Navaid serviced	=	96	(0 Seasonal)	
Total trips	=	33		
Underway days	=	71		
Avg buoys / trip	=	2.9		
Avg underway days / trip	=	2.2		
Total transit time	=	800:17		
Total service time	=	118:32		
Total idle time (not added)	=	159:50		
Total time			=	918:50

Total short transits	=	20		
Total length of short trips	=	1:07		
Additional prep/deprep time			=	3:53

Avg service time / navaid	=	1:14		
Avg transit time / navaid	=	8:23		
Avg total time / navaid	=	9:37		

Total ATON hours used = 922:43
=====

Historical ATON hours used = 1500:00
=====

10:0:3

Thursday 4/14/1994

ATON SERVICE FORCE MIX DSS

smilax11.REP

VESSEL SUMMARY REPORT

=====

Platform Characteristics

- WLIC SMILAX/RAMBLER/HAMMER
- Homeport BRUNSWICK, GA
- 8 knot average transit speed
- 120 hour maximum cruise length
- work day is 7:00 to 19:00
- Prep/Deprep time 0:15
- Dispatch Friday 1/1/1993 at 7:00
(Window size = 7 days, Step size = 7 days)

Summary Statistics

Total Navaid's assigned	= 168	(0 Seasonal)
Total Navaid's serviced	= 167	(0 Seasonal)
Total trips	= 49	
Underway days	= 134	
Avg buoys / trip	= 3.4	
Avg underway days / trip	= 2.7	
Total transit time	= 1829:19	
Total service time	= 339:35	
Total idle time (not added)	= 368:45	
Total time		= 2168:55

Total short transits	= 32	
Total length of short trips	= 1:28	
Additional prep/deprep time		= 6:32

Avg service time / navaid	= 2:02	
Avg transit time / navaid	= 11:00	
Avg total time / navaid	= 13:02	

Total ATON hours used = 2175:27
=====

Historical ATON hours used = 1500:00
=====

16:25:51
Friday 3/4/1994

ATON SERVICE FORCE MIX DSS

ANVIL4.REP

VESSEL SUMMARY REPORT

Platform Characteristics

- WLIC ANVIL/MALLET
- Homeport CORPUS CHRISTI, TX
- 7 knot average transit speed
- 120 hour maximum cruise length
- work day is 7:00 to 19:00
- Prep/Deprep time 0:15
- Dispatch Friday 1/1/1993 at 7:00
(Window size = 7 days, Step size = 7 days)

Summary Statistics

Total Navaids assigned	= 135	(0 Seasonal)	
Total Navaids serviced	= 134	(0 Seasonal)	
Total trips	= 41		
Underway days	= 84		
Avg buoys / trip	= 3.3		
Avg underway days / trip	= 2.0		
Total transit time	= 901:31		
Total service time	= 207:44		
Total idle time (not added)	= 319:02		
Total time		= 1109:15	

Total short transits	= 18		
Total length of short trips	= 2:24		
Additional prep/deprep time		= 2:06	

Avg service time / navaid	= 1:33		
Avg transit time / navaid	= 6:45		
Avg total time / navaid	= 8:18		

Total ATON hours used = 1111:21
=====

Historical ATON hours used = 1500:00
=====

16:25:22
Friday 3/4/1994

ATON SERVICE FORCE MIX DSS

CLAMP4.REP

VESSEL SUMMARY REPORT

=====

Platform Characteristics

- WLIC CLAMP/HATCHET
- Homeport GALVESTON, TX
- 7 knot average transit speed
- 120 hour maximum cruise length
- work day is 7:00 to 19:00
- Prep/Deprep time 0:15
- Dispatch Friday 1/1/1993 at 7:00
(Window size = 7 days, Step size = 7 days)

Summary Statistics

Total Navaid assigned	= 221	(0 Seasonal)	
Total Navaid serviced	= 220	(0 Seasonal)	
Total trips	= 47		
Underway days	= 100		
Avg buoys / trip	= 4.7		
Avg underway days / trip	= 2.1		
Total transit time	= 900:54		
Total service time	= 622:41		
Total idle time (not added)	= 289:02		
Total time		= 1523:36	

Total short transits	= 53		
Total length of short trips	= 5:56		
Additional prep/deprep time		= 7:19	

Avg service time / navaid	= 2:50		
Avg transit time / navaid	= 4:08		
Avg total time / navaid	= 6:58		

Total ATON hours used = 1530:54
=====

Historical ATON hours used = 1500:00
=====

16:24:6
Friday 3/4/1994

ATON SERVICE FORCE MIX DSS

SAGINAW4.REP

VESSEL SUMMARY REPORT

=====

Platform Characteristics

- WLIC SAGINAW/AXE
- Homeport MOBILE, AL
- 8 knot average transit speed
- 120 hour maximum cruise length
- work day is 7:00 to 19:00
- Prep/Deprep time 0:15
- Dispatch Friday 1/1/1993 at 7:00
(Window size = 7 days, Step size = 7 days)

Summary Statistics

Total Nav aids assigned	= 256	(0 Seasonal)	
Total Nav aids serviced	= 255	(0 Seasonal)	
Total trips	= 40		
Underway days	= 111		
Avg buoys / trip	= 6.4		
Avg underway days / trip	= 2.8		
Total transit time	= 1141:28		
Total service time	= 466:18		
Total idle time (not added)	= 441:40		
Total time		= 1607:46	

Total short transits	= 49		
Total length of short trips	= 4:32		
Additional prep/deprep time		= 7:43	

Avg service time / nav aid	= 1:50		
Avg transit time / nav aid	= 4:30		
Avg total time / nav aid	= 6:20		

Total ATON hours used = 1615:29
=====

Historical ATON hours used = 1500:00
=====

13:13:44
Tuesday 3/22/1994

ATON SERVICE FORCE MIX DSS

pamlico6.REP

VESSEL SUMMARY REPORT

=====

Platform Characteristics

- WLIC PAMLICO/WEDGE
- Homeport NEW ORLEANS, LA
- 8 knot average transit speed
- 120 hour maximum cruise length
- work day is 7:00 to 19:00
- Prep/Deprep time 0:15
- Dispatch Friday 1/1/1993 at 7:00
(Window size = 7 days, Step size = 7 days)

Summary Statistics

Total Navaid's assigned	= 199	(0 Seasonal)	
Total Navaid's serviced	= 198	(0 Seasonal)	
Total trips	= 46		
Underway days	= 100		
Avg buoys / trip	= 4.3		
Avg underway days / trip	= 2.2		
Total transit time	= 1173:25		
Total service time	= 234:22		
Total idle time (not added)	= 362:42		
Total time		= 1407:48	-----
Total short transits	= 52		
Total length of short trips	= 4:23		
Additional prep/deprep time		= 8:37	-----
Avg service time / navaid	= 1:11		
Avg transit time / navaid	= 5:58		
Avg total time / navaid	= 7:09		

Total ATON hours used = 1416:25
=====

Historical ATON hours used = 1500:00
=====

17:42:9

Thursday 3/17/1994

ATON SERVICE FORCE MIX DSS

anvil5.REP

VESSEL SUMMARY REPORT

Platform Characteristics

- WLIC ANVIL/MALLET
- Homeport CORPUS CHRISTI, TX
- 7 knot average transit speed
- 120 hour maximum cruise length
- work day is 7:00 to 19:00
- Prep/Deprep time 0:15
- Dispatch Friday 1/1/1993 at 7:00
(Window size = 7 days, Step size = 7 days)

Summary Statistics

Total Nav aids assigned	= 163	(0 Seasonal)	
Total Nav aids serviced	= 162	(0 Seasonal)	
Total trips	= 42		
Underway days	= 100		
Avg buoys / trip	= 3.9		
Avg underway days / trip	= 2.4		
Total transit time	= 1234:37		
Total service time	= 228:01		
Total idle time (not added)	= 291:00		
Total time		= 1462:38	
Total short transits	= 30		
Total length of short trips	= 3:40		
Additional prep/deprep time		= 3:50	
Avg service time / nav aid	= 1:24		
Avg transit time / nav aid	= 7:39		
Avg total time / nav aid	= 9:03		

Total ATON hours used = 1466:27
=====

Historical ATON hours used = 1500:00
=====

14:21:33

Friday 3/18/1994

ATON SERVICE FORCE MIX DSS

CLAMP5.REP

VESSEL SUMMARY REPORT

=====

Platform Characteristics

- WLIC CLAMP/HATCHET
- Homeport GALVESTON, TX
- 7 knot average transit speed
- 120 hour maximum cruise length
- work day is 7:00 to 19:00
- Prep/Deprep time 0:15
- Dispatch Friday 1/1/1993 at 7:00
(Window size = 7 days, Step size = 7 days)

Summary Statistics

Total Nav aids assigned	= 197	(0 Seasonal)	
Total Nav aids serviced	= 196	(0 Seasonal)	
Total trips	= 46		
Underway days	= 100		
Avg buoys / trip	= 4.3		
Avg underway days / trip	= 2.2		
Total transit time	= 805:35		
Total service time	= 612:55		
Total idle time (not added)	= 286:38		
Total time		= 1418:30	

Total short transits	= 41		
Total length of short trips	= 4:44		
Additional prep/deprep time		= 5:31	

Avg service time / nav aid	= 3:08		
Avg transit time / nav aid	= 4:08		
Avg total time / nav aid	= 7:16		

Total ATON hours used = 1424:01
=====

Historical ATON hours used = 1500:00
=====

14:24:55

Friday 3/18/1994

ATON SERVICE FORCE MIX DSS

saginaw5.REP

VESSEL SUMMARY REPORT

=====

Platform Characteristics

- WLIC SAGINAW/AXE
- Homeport MOBILE, AL
- 8 knot average transit speed
- 120 hour maximum cruise length
- work day is 7:00 to 19:00
- Prep, Deprep time 0:15
- Dispatch Friday 1/1/1993 at 7:00
(Window size = 7 days, Step size = 7 days)

Summary Statistics

Total Navais assigned	= 236	(0 Seasonal)	
Total Navais serviced	= 235	(0 Seasonal)	
Total trips	= 39		
Underway days	= 105		
Avg buoys / trip	= 6.0		
Avg underway days / trip	= 2.7		
Total transit time	= 1044:42		
Total service time	= 439:26		
Total idle time (not added)	= 430:10		
Total time		= 1484:09	

Total short transits	= 48		
Total length of short trips	= 4:39		
Additional prep/deprep time		= 7:21	

Avg service time / navaid	= 1:52		
Avg transit time / navaid	= 4:29		
Avg total time / navaid	= 6:21		

Total ATON hours used = 1491:30
=====

Historical ATON hours used = 1500:00
=====

14:25:40
Friday 3/18/1994

ATON SERVICE FORCE MIX DSS

pamlico5.REP

VESSEL SUMMARY REPORT

=====

Platform Characteristics

- WLIC PAMLICO/WEDGE
- Homeport NEW ORLEANS, LA
- 8 knot average transit speed
- 120 hour maximum cruise length
- work day is 7:00 to 19:00
- Prep/Deprep time 0:15
- Dispatch Friday 1/1/1993 at 7:00
(Window size = 7 days, Step size = 7 days)

Summary Statistics

Total Nav aids assigned	= 215	(0 Seasonal)	
Total Nav aids serviced	= 214	(0 Seasonal)	
Total trips	= 46		
Underway days	= 106		
Avg buoys / trip	= 4.7		
Avg underway days / trip	= 2.3		
Total transit time	= 1231:31		
Total service time	= 249:00		
Total idle time (not added)	= 417:31		
Total time		= 1480:31	-----
Total short transits	= 53		
Total length of short trips	= 4:42		
Additional prep/deprep time		= 8:33	-----
Avg service time / nav aid	= 1:10		
Avg transit time / nav aid	= 5:48		
Avg total time / nav aid	= 6:57		

Total ATON hours used = 1489:04
=====

Historical ATON hours used = 1500:00
=====

10:9:59
Friday 4/8/1994

ATON SERVICE FORCE MIX DSS

ANVIL10.REP

VESSEL SUMMARY REPORT

Platform Characteristics

- WLIC ANVIL
- Homeport CORPUS CHRISTI, TX
- 7 knot average transit speed
- 120 hour maximum cruise length
- work day is 7:00 to 19:00
- Prep/Deprep time 0:15
- Dispatch Friday 1/1/1993 at 7:00
(Window size = 7 days, Step size = 7 days)

Summary Statistics

Total Nav aids assigned	= 154	(0 Seasonal)
Total Nav aids serviced	= 153	(0 Seasonal)
Total trips	= 41	
Underway days	= 88	
Avg buoys / trip	= 3.7	
Avg underway days / trip	= 2.1	
Total transit time	= 946:56	
Total service time	= 214:01	
Total idle time (not added)	= 329:15	
Total time		= 1160:56

Total short transits	= 30	
Total length of short trips	= 3:40	
Additional prep/deprep time		= 3:50

Avg service time / nav aid	= 1:24	
Avg transit time / nav aid	= 6:13	
Avg total time / nav aid	= 7:37	

Total ATON hours used = 1164:46
=====

Historical ATON hours used = 1500:00
=====

10:9:6

Friday 4/8/1994

ATON SERVICE FORCE MIX DSS

CLAMP10.REP

VESSEL SUMMARY REPORT

Platform Characteristics

- WLIC CLAMP
- Homeport GALVESTON, TX
- 7 knot average transit speed
- 120 hour maximum cruise length
- work day is 7:00 to 19:00
- Prep/Deprep time 0:15
- Dispatch Friday 1/1/1993 at 7:00
(Window size = 7 days, Step size = 7 days)

Summary Statistics

Total Nav aids assigned	= 163	(0 Seasonal)
Total Nav aids serviced	= 162	(0 Seasonal)
Total trips	= 44	
Underway days	= 72	
Avg buoys / trip	= 3.7	
Avg underway days / trip	= 1.6	
Total transit time	= 382:00	
Total service time	= 472:01	
Total idle time (not added)	= 170:02	
Total time		= 854:01

Total short transits	= 35	
Total length of short trips	= 3:55	
Additional prep/deprep time		= 4:50

Avg service time / nav aid	= 2:55	
Avg transit time / nav aid	= 2:23	
Avg total time / nav aid	= 5:18	

Total ATON hours used = 858:50
=====

Historical ATON hours used = 1500:00
=====

8:52:36
Monday 4/11/1994

ATON SERVICE FORCE MIX DSS

hatchet8.REP

VESSEL SUMMARY REPORT

Platform Characteristics

- WLIC HATCHET
- Homeport LITTLE WAX BAYOU LT 1
- 7 knot average transit speed
- 120 hour maximum cruise length
- work day is 7:00 to 19:00
- Prep/Deprep time 0:15
- Dispatch Friday 1/1/1993 at 7:00
(Window size = 7 days, Step size = 7 days)

Summary Statistics

Total Nav aids assigned	= 128	(0 Seasonal)	
Total Nav aids serviced	= 127	(0 Seasonal)	
Total trips	= 26		
Underway days	= 68		
Avg buoys / trip	= 4.9		
Avg underway days / trip	= 2.6		
Total transit time	= 902:00		
Total service time	= 234:51		
Total idle time (not added)	= 165:28		
Total time		= 1136:51	

Total short transits	= 27		
Total length of short trips	= 2:40		
Additional prep/deprep time		= 4:05	

Avg service time / nav aid	= 1:51		
Avg transit time / nav aid	= 7:08		
Avg total time / nav aid	= 8:59		

Total ATON hours used = 1140:55
=====

Historical ATON hours used = 1500:00
=====

10:7:57

Friday 4/8/1994

ATON SERVICE FORCE MIX DSS

SAGINW10.REP

VESSEL SUMMARY REPORT

=====

Platform Characteristics

- WLIC SAGINAW
- Homeport MOBILE, AL
- 8 knot average transit speed
- 120 hour maximum cruise length
- work day is 7:00 to 19:00
- Prep/Deprep time 0:15
- Dispatch Friday 1/1/1993 at 7:00
(Window size = 7 days, Step size = 7 days)

Summary Statistics

Total Navaid assigned	= 171	(0 Seasonal)	
Total Navaid serviced	= 170	(0 Seasonal)	
Total trips	= 32		
Underway days	= 81		
Avg buoys / trip	= 5.3		
Avg underway days / trip	= 2.5		
Total transit time	= 835:38		
Total service time	= 352:38		
Total idle time (not added)	= 279:59		
Total time		= 1188:16	

Total short transits	= 35		
Total length of short trips	= 3:01		
Additional prep/deprep time		= 5:44	

Avg service time / navaid	= 2:04		
Avg transit time / navaid	= 4:57		
Avg total time / navaid	= 7:01		

Total ATON hours used = 1194:00
=====

Historical ATON hours used = 1500:00
=====

10:8:33

Friday 4/8/1994

ATON SERVICE FORCE MIX DSS

PMLICO12.REP

VESSEL SUMMARY REPORT

=====

Platform Characteristics

- WLIC PAMLICO
- Homeport NEW ORLEANS, LA
- 8 knot average transit speed
- 120 hour maximum cruise length
- work day is 7:00 to 19:00
- Dispatch Friday 1/1/1993 at 7:00
(Window size = 7 days, Step size = 7 days)

Summary Statistics

Total Nav aids assigned	= 195	(0 Seasonal)
Total Nav aids serviced	= 194	(0 Seasonal)
Total trips	= 43	
Underway days	= 86	
Avg buoys / trip	= 4.5	
Total service time	= 208:50	
Total idle time (not added)	= 296:29	
Total time		= 1057:29

Total short transits	= 44	
Total length of short trips	= 4:15	
Additional prep/deprep time		= 6:45

Avg service time / nav aid	= 1:05	
Avg transit time / nav aid	= 4:25	
Avg total time / nav aid	= 5:29	

Total ATON hours used = 1064:00
=====

Historical ATON hours used = 1500:00
=====

APPENDIX F
DSS RESULTS FOR
HUDSON and MALLET LOG FILES
&
ACTIVITY LOGS FOR
HUDSON, MALLET, AND SAGINAW

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16:53:11
Wednesday 1/5/1994

ATON SERVICE FORCE MIX DSS

hudson3.REF

VESSEL SUMMARY REPORT

=====

Platform Characteristics

- WLIC HUDSON (1 yr log file, 10/20/91 thru 10/20/92: all activities)
- Homeport Miami, FL
- 8 knot average transit speed
- 120 hour maximum cruise length
- work day is 7:00 to 19:00
- 1000 sq.ft. deck space available
- Prep/Deprep time 0:15
- Dispatch Tuesday 10/20/1992 at 7:00
(Window size = 3 days, Step size = 3 days)

Summary Statistics

Total Nav aids assigned	= 406	(0 Seasonal)
Total Nav aids serviced	= 402	(0 Seasonal)
Total trips	= 46	
Underway days	= 124	
Deck Space Available	= 46000	
Deck Space Used	= 0	(0.0% utilization)
Avg buoys / trip	= 8.7	
Avg underway days / trip	= 2.7	
Total transit time	= 1387:57	
Total service time	= 366:15	
Total idle time	= 465:51	
Total time		= 2220:03

Total short transits	= 180	
Total length of short trips	= 11:44	
Additional prep/deprep time		= 33:16

Avg service time / nav aid	= 0:55	
Avg transit time / nav aid	= 3:32	
Avg total time / nav aid	= 5:36	
Total discrepancies	= 0	
Computed discrepancy hours		= 0:00

Additional Structure Visits	= 0	
Additional Structure hours		= 0:00

Total weather hours		= 0:00

Same time servicing (subtract)		= 76:20

Total ATON hours used		= 2176:59
		=====
Historical ATON hours used		= 2124:00
		=====

9:33:20

Thursday 1/6/1994

ATON SERVICE FORCE MIX DSS

hudson7.REP

VESSEL SUMMARY REPORT

=====

Platform Characteristics

- WLIC HUDSON (1 yr log file, 10/20/91 thru 10/20/92: construction only)
- Homeport Miami, FL
- 8 knot average transit speed
- 120 hour maximum cruise length
- work day is 7:00 to 19:00
- 1000 sq.ft. deck space available
- Prep/Deprep time 0:15
- Dispatch Tuesday 10/20/1992 at 7:00
(Window size = 3 days, Step size = 3 days)

Summary Statistics

Total Navaids assigned	= 184	(0 Seasonal)
Total Navaids serviced	= 181	(0 Seasonal)
Total trips	= 44	
Underway days	= 102	
Deck Space Available	= 44000	
Deck Space Used	= 0	(0.0% utilization)
Avg buoys / trip	= 4.1	
Avg underway days / trip	= 2.3	
Total transit time	= 1263:52	
Total service time	= 294:45	
Total idle time	= 293:02	
Total time		= 1851:40

Total short transits	= 52	
Total length of short trips	= 4:15	
Additional prep/deprep time		= 8:45

Avg service time / navaid	= 1:38	
Avg transit time / navaid	= 7:02	
Avg total time / navaid	= 10:17	
Total discrepancies	= 0	
Computed discrepancy hours		= 0:00

Additional Structure Visits	= 0	
Additional Structure hours		= 0:00

Total weather hours		= 0:00

Same time servicing (subtract)		= 36:43

Total ATON hours used		= 1823:41
		=====
Historical ATON hours used		= 2124:00
		=====

16:31:57
Monday 1/10/1994

ATON SERVICE FORCE MIX DSS

mallet12.REP

VESSEL SUMMARY REPORT

=====

Platform Characteristics

- WLIC MALLET (1 yr log file, 6/24/92 thru 6/24/93: all activities)
- Homeport CORPUS CHRISTI, TX
- 6 knot average transit speed
- 120 hour maximum cruise length
- work day is 7:00 to 19:00
- 950 sq.ft. deck space available
- Prep/Deprep time 0:15
- Dispatch Thursday 6/24/1993 at 7:00
(Window size = 0 days, Step size = 1 days)

Summary Statistics

Total Navaid's assigned	= 367	(0 Seasonal)	
Total Navaid's serviced	= 365	(0 Seasonal)	
Total trips	= 36		
Underway days	= 87		
Deck Space Available	= 34200		
Deck Space Used	= 2298.97	(6.7% utilization)	
Avg buoys / trip	= 10.1		
Avg underway days / trip	= 2.4		
Total transit time	= 874:22		
Total service time	= 275:26		
Total idle time	= 377:29		
Total time		= 1527:17	-----
Total short transits	= 232		
Total length of short trips	= 18:32		
Additional prep/deprep time		= 39:28	-----
Avg service time / navaid	= 0:45		
Avg transit time / navaid	= 2:30		
Avg total time / navaid	= 4:18		
Total discrepancies	= 0		
Computed discrepancy hours		= 0:00	-----
Additional Structure Visits	= 0		
Additional Structure hours		= 0:00	-----
Total weather hours		= 0:00	-----
Same time servicing (subtract)		= 0:00	-----
Total ATON hours used		= 1566:45	=====
Historical ATON hours used		= 1845:00	=====

16:36:47
Monday 1/10/1994

ATON SERVICE FORCE MIX DSS

mallet13.REP

VESSEL SUMMARY REPORT

Platform Characteristics

- WLIC MALLET (1 yr log file, 6/24/92 thru 6/24/93: contruction only)
- Homeport CORPUS CHRISTI, TX
- 6 knot average transit speed
- 120 hour maximum cruise length
- work day is 7:00 to 19:00
- 950 sq.ft. deck space available
- Prep/Deprep time 0:15
- Dispatch Thursday 6/24/1993 at 7:00
(Window size = 0 days, Step size = 1 days)

Summary Statistics

Total Navaid's assigned	=	81	(0 Seasonal)
Total Navaid's serviced	=	79	(0 Seasonal)
Total trips	=	31	
Underway days	=	66	
Deck Space Available	=	29450	
Deck Space Used	=	0	(0.0% utilization)
Avg buoys / trip	=	2.5	
Avg underway days / trip	=	2.1	
Total transit time	=	737:01	
Total service time	=	157:49	
Total idle time	=	151:00	
Total time			= 1045:49
Total short transits	=	14	
Total length of short trips	=	1:41	
Additional prep/deprep time	=		1:49
Avg service time / navaid	=	2:00	
Avg transit time / navaid	=	9:21	
Avg total time / navaid	=	13:16	
Total discrepancies	=	0	
Computed discrepancy hours	=		0:00
Additional Structure Visits	=	0	
Additional Structure hours	=		0:00
Total weather hours	=		0:00
Same time servicing (subtract)	=		0:00
Total ATON hours used	=		1047:39
			=====
Historical ATON hours used	=		1845:00
			=====

Hudson Log Activities
(23 Months, Oct/91 thru Sep/93)

Aid Type	Quarter Hours	Count	Total Service Time
WLIC Needed? = N			
DBN	.33	106	8.8
DBN	1.00	35	8.8
DBN	5.00	2	2.5
DBN	6.00	1	1.5
LB	.33	1	.1
LB	1.00	3	.8
LB	3.00	3	2.3
LB	4.00	3	3.0
LB	6.00	2	3.0
LB	7.00	1	1.8
LT	.33	76	6.3
LT	1.00	32	8.0
LT	2.00	2	1.0
LT	3.00	1	.8
LT	4.00	6	6.0
LT	5.00	2	2.5
LT	8.00	1	2.0
LT	27.00	1	6.8
ULB	1.00	14	3.5
ULB	2.00	12	6.0
ULB	3.00	8	6.0
ULB	4.00	1	1.0
Totals		313	82.2 (11.8%)

Aid Type	Quarter Hours	Count	Total Service Time
WLIC Needed? = Y			
DBN	1.00	28	7.0
DBN	2.00	17	8.5
DBN	3.00	31	23.3
DBN	4.00	46	46.0
DBN	5.00	40	50.0
DBN	6.00	16	24.0
DBN	7.00	8	14.0
DBN	8.00	3	6.0
DBN	9.00	2	4.5
DBN	10.00	4	10.0
DBN	11.00	4	11.0
DBN	12.00	1	3.0
DBN	15.00	1	3.8
DBN	16.00	2	8.0
DBN	19.00	1	4.8
DBN	21.00	1	5.3
DBN	24.00	1	6.0
LT	1.00	13	3.3
LT	2.00	12	6.0
LT	3.00	8	6.0
LT	4.00	12	12.0
LT	5.00	13	16.3
LT	6.00	11	16.5
LT	7.00	5	8.8
LT	8.00	3	6.0
LT	9.00	8	18.0
LT	10.00	5	12.5
LT	11.00	5	13.8
LT	12.00	11	33.0
LT	13.00	5	16.3
LT	14.00	1	3.5
LT	15.00	3	11.3
LT	16.00	2	8.0
LT	17.00	1	4.3
LT	19.00	6	28.5
LT	20.00	3	15.0
LT	21.00	1	5.3
LT	22.00	1	5.5
LT	24.00	1	6.0
LT	28.00	2	14.0
LT	31.00	2	15.5
LT	32.00	1	8.0
LT	34.00	1	8.5
LT	35.00	1	8.8
LT	39.00	2	19.5
LT	43.00	1	10.8
LT	49.00	1	12.3
LT	50.00	1	12.5
LT	52.00	1	13.0
Totals		349	613.3 (88.2%)

Table: Hudhours 662 695.5
(100.0%)

Mallet Log Activities
(15 Months, Jun/92 thru Aug/93)

Aid Type	Activity	Service Time	Count	Total Service Time
WLIC Needed? = N				
3 PILE WOOD LT	INSPECTION	.50	1	.50
4 PILE WOOD PLATFORM	INSPECTION	.50	1	.50
LB	REPLACED	1.50	1	1.50
PASSING LIGHT ONLY	INSPECTION	.50	3	1.50
SINGLE PILE WOOD LT	INSPECTION	.50	6	3.00
SINGLE PILE WOOD LT	POSITION CHECK	.50	29	14.50
ULB	ESTABLISHED (MISSING)	.50	16	8.00
ULB	INSPECTION	.33	165	54.45
ULB	MOORING INSPECTION	.50	22	11.00
ULB	POSITION CHECK	.33	13	4.29
ULB	REPLACED	.50	14	7.00
ULB	RESET	.50	42	21.00
WOOD DAYBEACON	INSPECTION	.25	2	.50
WLIC Needed? = N Totals			315	127.74 (
40.6%)				
WLIC Needed? = Y				
3 PILE WOOD LT	DISCONTINUED	1.00	1	1.00
3 PILE WOOD LT	REBUILT	3.00	11	33.00
3 PILE WOOD LT	REPAIRED	1.00	5	5.00
4 PILE WOOD PLATFORM	REBUILT	6.00	3	18.00
8 PILE WOOD PLATFORM	REBUILT	15.00	1	15.00
8 PILE WOOD PLATFORM	REPAIRED	3.00	1	3.00
MUD SILL	REBUILT	2.00	1	2.00
None	REBUILT	.33	2	.66
PASSING LIGHT ONLY	ESTABLISHED	.33	3	.99
PASSING LIGHT ONLY	REBUILT	1.50	1	1.50
PASSING LIGHT ONLY	RESET	.50	1	.50
SINGLE PILE WOOD DBN	REBUILT	1.50	15	22.50
SINGLE PILE WOOD DBN	REPAIRED	.25	2	.50
SINGLE PILE WOOD LT	ESTABLISHED	1.00	1	1.00
SINGLE PILE WOOD LT	REBUILT	2.00	32	64.00
SINGLE PILE WOOD LT	REPAIRED	.50	7	3.50
WOOD DAYBEACON	REBUILT	1.50	10	15.00
WLIC Needed? = Y Totals			97	187.15 (
59.4%)				
Table: Malhours			412	314.89
(100.0%)				

Saginaw Log Activities
(21 Months, Jan/92 thru Sep/93)

Aid Type	Activity	Service Time	Count	Total Service Time	
WLIC Needed? = N					
BUOY	/MOORING	.75	81	60.8	
BUOY	/MOORING/RELIEF	.75	48	36.0	
BUOY	/RELIEF	.75	3	2.3	
BUOY	DISC BUOY	.75	1	.8	
BUOY	DISCONTINUED	.75	1	.8	
BUOY	ESTABLISHED	.75	2	1.5	
BUOY	INSPECTION	.50	1	.5	
BUOY	None	.75	4	3.0	
BUOY	POSITION CHECK	.75	2	1.5	
BUOY	REPAIRED	.75	4	3.0	
BUOY	REPLACED	.75	10	7.5	
BUOY	RESET	.75	11	8.3	
DBN	None	.75	1	.8	
LT	DISC BUOY	.75	1	.8	
LT	INSPECTION	.50	5	2.5	
LT	None	.75	9	6.8	
LT	RECHARGED	.75	4	3.0	
WLIC Needed? = N Totals			188	139.5	(9.8%)
WLIC Needed? = Y					
1 Pile Steel LT	Rebuild	4.00	1	4.0	
1 Pile Wood DBN	Discontinue	1.25	1	1.3	
1 Pile Wood DBN	Establish	1.00	77	77.0	
1 Pile Wood DBN	Rebuild	1.00	38	38.0	
1 Pile Wood DBN	Rebuild/Remove	1.50	35	52.5	
1 Pile Wood DBN	Repair	.20	14	2.8	
1 Pile Wood DBN	Reset	1.50	1	1.5	
1 Pile Wood LT	Discontinue	1.25	1	1.3	
1 Pile Wood LT	Establish	1.30	36	46.8	
1 Pile Wood LT	Rebuild	1.30	71	92.3	
1 Pile Wood LT	Rebuild/Remove	1.75	53	92.8	
1 Pile Wood LT	Repair	.30	27	8.1	
1 Pile Wood LT	Reset	1.75	1	1.8	
3 Pile Wood LT	Establish	2.00	13	26.0	
3 Pile Wood LT	Rebuild	2.00	26	52.0	
3 Pile Wood LT	Rebuild/Remove	3.50	20	70.0	
3 Pile Wood LT	Repair	1.00	10	10.0	
4 Pile Wood LT	Establish	16.00	7	112.0	
4 Pile Wood LT	Rebuild	16.00	13	208.0	
4 Pile Wood LT	Rebuild/Remove	24.00	10	240.0	
4 Pile Wood LT	Repair	4.00	5	20.0	
8 Pile Wood LT	Establish	20.00	1	20.0	
8 Pile Wood LT	Rebuild	20.00	2	40.0	
8 Pile Wood LT	Rebuild/Remove	28.00	2	56.0	
8 Pile Wood LT	Repair	8.00	1	8.0	
WLIC Needed? = Y Totals			466	1282.0	(90.2%)
Table: Saghours			654	1421.5	(100.0%)

Actions and Derived Actions for
HUDSON, MALLET and SAGINAW Logs

Page 1

WLIC	WLIC Needed?	Aid Type	Indicated Action	Derived Action	Count
HUDSON	N	DBN		INSPECTION	1
HUDSON	N	DBN	CONDUCTED SOUNDING SURVEYED BISCAYN E BAY DBNS 16-2	INSPECTION	1
HUDSON	N	DBN	INSPECTED FOR DETERIORATION	INSPECTION	1
HUDSON	N	DBN	INSPECTED SPC FOR REBUILD	INSPECTION	1
HUDSON	N	DBN	INSPECTED SPS STRUCTURES	INSPECTION	1
HUDSON	N	DBN	INSPECTED SPW FOR REBUILD	INSPECTION	1
HUDSON	N	DBN	INSPECTED STRUCTURE FOR LEANING	INSPECTION	1
HUDSON	N	DBN	SURVEYED RED SIDE OF CH LAKE WORTH S DBN 46-48	INSPECTION	1
HUDSON	N	DBN	TO DETERMINE IF CUTTER CAN TRANSIT CHANNEL	INSPECTION	17
HUDSON	N	DBN	CONVERTED OLD SPS OF ABOVE AID TO A SHOAL DBN	REBUILD	1
HUDSON	N	DBN	FOUND OFF STATION, RESET ON STATION	REBUILD/REMOVE	1
HUDSON	N	DBN	FOUND EXTINGUISHED, RECHARGED	RECHARGE	1
HUDSON	N	DBN	REBLACED MISSING DAYBOARDS	REPAIRED	1
HUDSON	N	DBN	RENUMBERED/REPLACED DAYBOARDS	REPAIRED	1
HUDSON	N	DBN	REPLACED 1 MISSING DAYBOARD	REPAIRED	1
HUDSON	N	DBN	REPLACED DAMAGED DAYBOARDS	REPAIRED	1
HUDSON	N	DBN	REPLACED DAYBOARDS	REPAIRED	4
HUDSON	N	DBN	WIRE DRAGGED NEG RESULTS FOR OLD SPC	REPAIRED	2
HUDSON	N	DBN	SMALL BOAT LOWERED DAYBOARDS THAT WERE OBSCURING TH	SMALL BOAT	1
HUDSON	N	DBN	SMALL BOAT RENUMBERED/REPLACED DAYBOARDS	SMALL BOAT	1
HUDSON	N	DBN	SMALL BOAT RENUMBERED/REPLACED DAYBOARDS ON (08) DB	SMALL BOAT	1
HUDSON	N	DBN	SMALL BOAT REPLACED 1 MISSING DAYBOARD	SMALL BOAT	1
HUDSON	N	DBN	SMALL BOAT REPLACED DAMAGED DAYBOARD	SMALL BOAT	1
HUDSON	N	DBN	SMALL BOAT REPLACED DAYBOARDS	SMALL BOAT	34
HUDSON	N	DBN	SMALL BOAT REPLACED DAYBOARDS ON (02) DAY BEACONS	SMALL BOAT	5
HUDSON	N	DBN	SMALL BOAT REPLACED DAYBOARDS ON (03) DAY BEACONS	SMALL BOAT	6
HUDSON	N	DBN	SMALL BOAT REPLACED DAYBOARDS ON (03) DAYBEACONS	SMALL BOAT	6
HUDSON	N	DBN	SMALL BOAT REPLACED DAYBOARDS ON (04) DAY BEACONS	SMALL BOAT	2
HUDSON	N	DBN	SMALL BOAT REPLACED DAYBOARDS ON (04) DAYBEACONS	SMALL BOAT	3
HUDSON	N	DBN	SMALL BOAT REPLACED DAYBOARDS ON (05) DAYBEACONS	SMALL BOAT	3
HUDSON	N	DBN	SMALL BOAT REPLACED DAYBOARDS ON (06) DAY BEACONS	SMALL BOAT	6
HUDSON	N	DBN	SMALL BOAT REPLACED DAYBOARDS ON (07) DAY BEACONS	SMALL BOAT	1
HUDSON	N	DBN	SMALL BOAT REPLACED DAYBOARDS ON (07) DAYBEACONS	SMALL BOAT	1
HUDSON	N	DBN	SMALL BOAT REPLACED DAYBOARDS ON (08) DAY BEACONS	SMALL BOAT	1
HUDSON	N	DBN	SMALL BOAT REPLACED DAYBOARDS ON (09) DAYBEACONS	SMALL BOAT	1
HUDSON	N	DBN	SMALL BOAT REPLACED DAYBOARDS ON (10) DAYBEACONS	SMALL BOAT	2
HUDSON	N	DBN	SMALL BOAT REPLACED DAYBOARDS ON (102) DAYBEACONS	SMALL BOAT	1
HUDSON	N	DBN	SMALL BOAT REPLACED DAYBOARDS ON (11) DAYBEACONS	SMALL BOAT	2
HUDSON	N	DBN	SMALL BOAT REPLACED DAYBOARDS ON (15) DAY BEACONS	SMALL BOAT	1
HUDSON	N	DBN	SMALL BOAT REPLACED DAYBOARDS ON (16) DAYBEACONS	SMALL BOAT	1
HUDSON	N	DBN	SMALL BOAT REPLACED DAYBOARDS ON (2) DAYBEACONS	SMALL BOAT	6
HUDSON	N	DBN	SMALL BOAT REPLACED DAYBOARDS ON (29) DAYBEACONS	SMALL BOAT	1
HUDSON	N	DBN	SMALL BOAT REPLACED DAYBOARDS ON (3) DAYBEACONS	SMALL BOAT	2
HUDSON	N	DBN	SMALL BOAT REPLACED DAYBOARDS ON (4) DAYBEACONS	SMALL BOAT	2
HUDSON	N	DBN	SMALL BOAT REPLACED DAYBOARDS ON (5) DAYBEACONS	SMALL BOAT	3
HUDSON	N	DBN	SMALL BOAT REPLACED DAYBOARDS ON (7) DAYBEACONS	SMALL BOAT	3
HUDSON	N	DBN	SMALL BOAT REPLACED DAYBOARDS ON (8) DAYBEACONS	SMALL BOAT	2
HUDSON	N	DBN	SMALL BOAT REPLACED DAYBOARDS ON 13 DAYBEACONS	SMALL BOAT	1
HUDSON	N	DBN	SMALL BOAT REPLACED DAYBOARDS/ESTABLISHED POSTIONS	SMALL BOAT	1
HUDSON	N	DBN	SMALL BOAT REPLACED MISSING DAYBOARD	SMALL BOAT	1
HUDSON	N	DBN	SMALL BOAT REPLACED MISSING DAYBOARDS	SMALL BOAT	1
HUDSON	N	DBN	SMALL BOAT REPLACED MISSING ICW MARK ON DAYBOARD	SMALL BOAT	1
HUDSON	N	DBN	SMALL BOAT STRAIGHTENED AND REATTACHED DAYBOARDS	SMALL BOAT	1
HUDSON	N	LB	DISCONTINUED AFTER WORKING ABOVE AID	DISCONTINUED	1
HUDSON	N	LB	DISCONTINUED DBN 17, SET BUOY,	DISCONTINUED	1
HUDSON	N	LB	CONDUCTED EXTENSIVE SURVEY OF SHOAL, REMOVED TEMP	INSPECTION	1
HUDSON	N	LB	CONDUCTED MOORING INSPECTION	MOORING	2
HUDSON	N	LB	MOORING INSPECTION	MOORING	1
HUDSON	N	LB	RELOCATED, CONDUCTED MOORING INSPECTION	MOORING	1
HUDSON	N	LB	REPLACED BRIDLE, MOORING INSPECTION, INSPECTED	MOORING	1
HUDSON	N	LB	RELIEF AND MOORING	MOORING/RELIEF	1
HUDSON	N	LB	RELIEF AND MOORING INSPECTION	MOORING/RELIEF	1

Actions and Derived Actions for
HUDSON, MALLET and SAGINAW Logs

Page 2

WLIC	WLIC Needed?	Aid Type	Indicated Action	Derived Action	Count
HUDSON	N	LB	RELOCATED DUE TO SHOALING	REBUILD/REMOVE	1
HUDSON	N	LB	RELIEVED AND RELOCATED BUOY	RELIEF	1
HUDSON	N	LB	SMALL BOAT REPAIRED AND INSPECTED (04) LIGHTS	SMALL BOAT	1
HUDSON	N	LT	ESTABLISHED BUOY TO MARK BEST WATER,	ESTABLISHED	1
HUDSON	N	LT		INSPECTION	1
HUDSON	N	LT	HUDSON INSPECTED/SERVICED LIGHT	INSPECTION	1
HUDSON	N	LT	INSPECTED CONCRETE DOUGHNUT PLATFORM, GOOD CONDITIO	INSPECTION	1
HUDSON	N	LT	INSPECTED PLATFOP, M, INSTALLED NIXALITE	INSPECTION	1
HUDSON	N	LT	INSPECTED PLATFORM AND PILE	INSPECTION	1
HUDSON	N	LT	INSPECTED PLATFORM, DESIGNED SPECIAL MPS TEMPLATE C	INSPECTION	1
HUDSON	N	LT	INSPECTED STRUCTURE FOR DETERIORATION	INSPECTION	4
HUDSON	N	LT	INSPECTED STRUCTURE FOR LEANING	INSPECTION	1
HUDSON	N	LT	INSPECTED, PLANNED FOR REBUILDING	INSPECTION	1
HUDSON	N	LT	INSPECTED, SERVICED, REPLACED BATTERY BOX	INSPECTION	1
HUDSON	N	LT	INSPECTED/SERVICED RFL AND RRL	INSPECTION	1
HUDSON	N	LT	MINIOR REPAIRS, INSPECTED/SERVICED	INSPECTION	1
HUDSON	N	LT	SURVEYED AREA, DREDGING NEEDED	INSPECTION	1
HUDSON	N	LT	TO DETERMINE IF CUTTER CAN TRANSIT CHANNEL	INSPECTION	1
HUDSON	N	LT	REBUILT UTILIZING 20 FT 18 INCH TWR AND SAF-T-CLIMB	REBUILD	1
HUDSON	N	LT	REBUILT, ADDED 5 FT TWR SECTION, BRUSHED, REMOUNTED	REBUILD	1
HUDSON	N	LT	REBUILT 30' 18" TOWER, REMOVED TWO OLD STRUCTURES	REBUILD/REMOVE	1
HUDSON	N	LT	FOUND EXTINGUISHED, RECHARGED, LWP	RECHARGE	1
HUDSON	N	LT	INSTALLED 6 KRW	REPAIRED	1
HUDSON	N	LT	INSTALLED SAF-T-CLIMB	REPAIRED	1
HUDSON	N	LT	REPAIRED AND REALIGNED DAYBOARDS	REPAIRED	1
HUDSON	N	LT	REPAIRED DAYBOARDS	REPAIRED	1
HUDSON	N	LT	REPAIRED HANGING DAYBOARD	REPAIRED	1
HUDSON	N	LT	REPAIRED HANGING DAYBOARD, REPLACED L BRACKET	REPAIRED	1
HUDSON	N	LT	REPLACED 1 MISSING DAYBOARD	REPAIRED	1
HUDSON	N	LT	REPLACED 30 FT LADDER, FA 240, DAYBOARD, INSTALL SAF	REPAIRED	1
HUDSON	N	LT	REPLACED ALL LIGHTING EQUIPMENT, FOUND EXTINGUISHED	REPAIRED	1
HUDSON	N	LT	REPLACED DAYBOARDS AND LADDER BACK	REPAIRED	1
HUDSON	N	LT	REPLACED DAYBOARDS, ONE WAS MISSING	REPAIRED	1
HUDSON	N	LT	REPLACED LADDER	REPAIRED	1
HUDSON	N	LT	REPLACED LADDER BACK	REPAIRED	1
HUDSON	N	LT	REPLACED MISSING DAYBOARD	REPAIRED	1
HUDSON	N	LT	REPLACED MISSING DAYBOARDS	REPAIRED	1
HUDSON	N	LT	SERVICED, INSPECTED, REPLACED DAYBOARDS	REPAIRED	1
HUDSON	N	LT	SERVICED, REPLACED DAYBOARDS	REPAIRED	4
HUDSON	N	LT	STARTED DAYBOARD REPLACEMENT	REPAIRED	1
HUDSON	N	LT	STARTED REBUILDING	REPAIRED	1
HUDSON	N	LT	STARTED SERVICE/DAYBOARD REPLACEMENT	REPAIRED	1
HUDSON	N	LT	FOUND EXTINGUISHED, SMALL BOAT RECHARGED AND SERVIC	SMALL BOAT	1
HUDSON	N	LT	REPORTED AS A DISC TO ANT, SMALL BOAT SERVICED	SMALL BOAT	1
HUDSON	N	LT	SMALL BOAT CHANGED DAYBOARDS TO 4SGs	SMALL BOAT	1
HUDSON	N	LT	SMALL BOAT CLEANED SOLAR PANEL AND REPLACED BATTERY	SMALL BOAT	1
HUDSON	N	LT	SMALL BOAT ESTABLISHED LT ON STRUCTURE	SMALL BOAT	1
HUDSON	N	LT	SMALL BOAT INSPECTED MPW IN MADE MINOR REPAIRS	SMALL BOAT	7
HUDSON	N	LT	SMALL BOAT INSPECTED/SERVICED (2) LIGHTS	SMALL BOAT	1
HUDSON	N	LT	SMALL BOAT INSPECTED/SERVICED (3) LIGHTS	SMALL BOAT	3
HUDSON	N	LT	SMALL BOAT INSPECTED/SERVICED (4) LIGHTS	SMALL BOAT	1
HUDSON	N	LT	SMALL BOAT INSPECTED/SERVICED (7) LIGHTS	SMALL BOAT	1
HUDSON	N	LT	SMALL BOAT INSPECTED/SERVICED LIGHT	SMALL BOAT	2
HUDSON	N	LT	SMALL BOAT RELIT (FOUND EXT)	SMALL BOAT	1
HUDSON	N	LT	SMALL BOAT REMOUNTED DAYBOARDS	SMALL BOAT	2
HUDSON	N	LT	SMALL BOAT RENUMBERED/REPLACED DAYBOARDS ON (02) DB	SMALL BOAT	1
HUDSON	N	LT	SMALL BOAT REPAIRED AND INSPECTED (04) LIGHTS	SMALL BOAT	1
HUDSON	N	LT	SMALL BOAT REPAIRED PLATFORM ON MPW AND REPLACED LA	SMALL BOAT	1
HUDSON	N	LT	SMALL BOAT REPAIRED, REPLACED SOLAR PANEL	SMALL BOAT	1
HUDSON	N	LT	SMALL BOAT REPLACED 1 MISSING DAYBOARD	SMALL BOAT	1
HUDSON	N	LT	SMALL BOAT REPLACED ALL LIGHTING EQUIPMENT, HIT BY	SMALL BOAT	1
HUDSON	N	LT	SMALL BOAT REPLACED DAYBOARDS	SMALL BOAT	2

Actions and Derived Actions for
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WLIC	WLIC Needed?	Aid Type	Indicated Action	Derived Action	Count
HUDSON	N	LT	SMALL BOAT REPLACED DAYBOARDS AND CLEANED SOLAR PAN	SMALL BOAT	1
HUDSON	N	LT	SMALL BOAT REPLACED DAYBOARDS ON (06) DAYBEACONS	SMALL BOAT	1
HUDSON	N	LT	SMALL BOAT REPLACED DAYBOARDS ON (3) LIGHTS	SMALL BOAT	1
HUDSON	N	LT	SMALL BOAT REPLACED DAYBOARDS/ESTABLISHED POSTION,S	SMALL BOAT	1
HUDSON	N	LT	SMALL BOAT REPLACED LADDER	SMALL BOAT	3
HUDSON	N	LT	SMALL BOAT REPLACED LADDER BACK	SMALL BOAT	3
HUDSON	N	LT	SMALL BOAT REPLACED MISSING DAYBOARD	SMALL BOAT	3
HUDSON	N	LT	SMALL BOAT SERVICED AID AND CLEANED SOLAR PANEL	SMALL BOAT	1
HUDSON	N	LT	SMALL BOAT SERVICED AND CHANGED LANTERN TO AMBER	SMALL BOAT	3
HUDSON	N	LT	SMALL BOAT SERVICED FOUND BURNING IN DAYLIGHT	SMALL BOAT	1
HUDSON	N	LT	SMALL BOAT SERVICED LT, REPLACED MISSING DAYBOARD,	SMALL BOAT	1
HUDSON	N	LT	SMALL BOAT SERVICED REPLACED DAYBOARDS	SMALL BOAT	11
HUDSON	N	LT	SMALL BOAT SERVICED REPLACED LADDER BRACKETS AND DA	SMALL BOAT	2
HUDSON	N	LT	SMALL BOAT SERVICED, AND REPLACED MISSING BATTERY	SMALL BOAT	1
HUDSON	N	LT	SMALL BOAT SERVICED, REPLACED DAYBOARDS	SMALL BOAT	11
HUDSON	N	LT	SMALL BOAT STRAIGHTENED DAYBOARDS	SMALL BOAT	1
HUDSON	N	Port			1
HUDSON	N	ULB	ESTABLISHED BUOY TO MARK BEST WATER,	ESTABLISHED	1
HUDSON	N	ULB	ESTABLISHED BUOY, WAS DBN WITH HIGH KNOCKDOWN, REMOV	ESTABLISHED	1
HUDSON	N	ULB	ESTABLISHED DUE TO SHOALING	ESTABLISHED	1
HUDSON	N	ULB	POST/ON CHECKED & SOUNDINGS	INSPECTION	1
HUDSON	N	ULB	POSTION CHECKED & SOUNDINGS	INSPECTION	3
HUDSON	N	ULB	CONDUCTED MOORING INSPECTION	MOORING	3
HUDSON	N	ULB	CONDUCTED MOORING INSPECTION, PAINTED	MOORING	1
HUDSON	N	ULB	CONDUCTED SOUNDING SURVEY, REPLACED MOORING	MOORING	1
HUDSON	N	ULB	MOORING INSPECTION	MOORING	5
HUDSON	N	ULB	RELOCATED DUE TO SHOALING, MOORING INSPECTION	MOORING	2
HUDSON	N	ULB	RELOCATED, CONDUCTED MOORING INSPECTION	MOORING	2
HUDSON	N	ULB	RELOCATED, CONDUCTED MOORING INSPECTION, RENUMBERED	MOORING	1
HUDSON	N	ULB	REPLACED MOORING, RELOCATED DUE TO DREDGING	MOORING	1
HUDSON	N	ULB	RELIEF AND MOORING	MOORING/RELIEF	1
HUDSON	N	ULB	RELIEF AND MOORING INSPECTION	MOORING/RELIEF	1
HUDSON	N	ULB	RELIEVED HULL CONDUCTED MOORING INSPECTION	MOORING/RELIEF	1
HUDSON	N	ULB	RELIEVED HULL, CONDUCTED MOORING INSPECTION	MOORING/RELIEF	1
HUDSON	N	ULB	RELIEVED HULL, REPLACED MOORING	MOORING/RELIEF	1
HUDSON	N	ULB	RELIEVED AND RELOCATED BUOY	RELIEF	5
HUDSON	N	ULB	RELIEVED AND RELOCATED TO MARK BEST WATER	RELIEF	1
HUDSON	N	ULB	RELOCATED AND RELIEVED HULL	RELIEF	1
HUDSON	N	Total			314
HUDSON	Y	DBN	DISCONTINUED, RECOVERED OLD SPC	DISCONTINUED	1
HUDSON	Y	DBN	ESTABLISHED AID UTILIZING A SPW	ESTABLISHED	3
HUDSON	Y	DBN	ESTABLISHED AID UTILIZING SPW REMOVED (2) TEMP BUOY	ESTABLISHED	1
HUDSON	Y	DBN	ESTABLISHED AID, DISCONTINUED BUOY	ESTABLISHED	1
HUDSON	Y	DBN	ESTABLISHED UTILIZED SPW	ESTABLISHED	2
HUDSON	Y	DBN	ESTABLISHED UTILIZING A SPW	ESTABLISHED	4
HUDSON	Y	DBN	ESTABLISHED UTILIZING ASPS TO MARK A ROCK LEDGE	ESTABLISHED	1
HUDSON	Y	DBN	ESTABLISHED UTILIZING SPW, REMOVED TRUB	ESTABLISHED	1
HUDSON	Y	DBN	ESTABLISHED, SPW, DISCONTINUED DBN 6, RECOVERED OLD	ESTABLISHED	1
HUDSON	Y	DBN	ESTABLISHED, UTILIZED SPW, REMOVED TEMP BUOY	ESTABLISHED	2
HUDSON	Y	DBN	CONVERTED BUOY TO SPW DBN, DISCONTINUED BOUY	REBUILD	5
HUDSON	Y	DBN	CONVERTED LT 1A TO DBN 1A	REBUILD	1
HUDSON	Y	DBN	CONVERTED TO MPS, NOAA, NWS, TENDER WORK ORDER	REBUILD	1
HUDSON	Y	DBN	COVERTED OLD DBN 18 TO A SHOAL DBN (SEE ABOVE)	REBUILD	1
HUDSON	Y	DBN	REBUILT AID UTILIZING A SPW, DISCONTINUED TRUB	REBUILD	2
HUDSON	Y	DBN	REBUILT AID UTILIZING ASPS, DISCONTINUED TRLB	REBUILD	1
HUDSON	Y	DBN	REBUILT AND RELOCATED UTILIZED A SPW	REBUILD	1
HUDSON	Y	DBN	REBUILT AS SPW, DISCONTINUED TRUB	REBUILD	4
HUDSON	Y	DBN	REBUILT UTILIZED SPS	REBUILD	1
HUDSON	Y	DBN	REBUILT UTILIZED SPW, DISCONTINUED TRUB	REBUILD	1
HUDSON	Y	DBN	REBUILT UTILIZING A SPW (CHANGED FROM PRIVATE TO FE	REBUILD	1
HUDSON	Y	DBN	REBUILT UTILIZING A SPW, WIRE DRAGGED, REMOVE D TRU	REBUILD	1

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WLIC	WLIC Needed?	Aid Type	Indicated Action	Derived Action	Count
HUDSON	Y	DBN	REBUILT UTILIZING ASPS, CUT OFF OLD SPS ABOVE WATER	REBUILD	3
HUDSON	Y	DBN	REBUILT UTILIZING ASPS, OLD SPS DESTROYED	REBUILD	1
HUDSON	Y	DBN	REBUILT UTILIZING SPS, UNABLE TO LOCATE OLD SPW	REBUILD	1
HUDSON	Y	DBN	REBUILT/RELOCATED UTILIZING A SPW, OLD SPS CUTOFF B	REBUILD	1
HUDSON	Y	DBN	CHANGED AID FM BUOY TO DBN UTILIZING SPW, REMOVED B	REBUILD/REMOVE	2
HUDSON	Y	DBN	FOUND LEANING, REBUILT UTILIZING SPW, RECOVERED O	REBUILD/REMOVE	1
HUDSON	Y	DBN	REBUILD AID UTILIZING A SPW, RECOVERED OLD CAST IRO	REBUILD/REMOVE	1
HUDSON	Y	DBN	REBUILT AID TO MARK BEST WATER UTILIZED SPW, REMOVE	REBUILD/REMOVE	1
HUDSON	Y	DBN	REBUILT AID UTILIZING A SPW, RECOVERED OLD SPS WAS	REBUILD/REMOVE	1
HUDSON	Y	DBN	REBUILT AID UTILIZING A SPW, RECOVERED OLD SPW	REBUILD/REMOVE	1
HUDSON	Y	DBN	REBUILT AID UTILIZING A SPW, RECOVERED TRUB	REBUILD/REMOVE	1
HUDSON	Y	DBN	REBUILT AID UTILIZING SPW, RECOVERED 2 OLD STRUCTUR	REBUILD/REMOVE	1
HUDSON	Y	DBN	REBUILT AND RELOCATED UTILIZING A SPW, RECOVERED OL	REBUILD/REMOVE	1
HUDSON	Y	DBN	REBUILT AND RELOCATED, UTILIZED SPW, REMOVED WRECKA	REBUILD/REMOVE	1
HUDSON	Y	DBN	REBUILT AS SPS, RECOVERED OLD SPS, DISCONTINUED TRU	REBUILD/REMOVE	1
HUDSON	Y	DBN	REBUILT AS SPW, RECOVERED OLD SPC, REMOVED TRUB	REBUILD/REMOVE	1
HUDSON	Y	DBN	REBUILT AS SPW, RECOVERED OLD SPS, REMOVED TRUB	REBUILD/REMOVE	3
HUDSON	Y	DBN	REBUILT AS SPW, RECOVERED OLD SPW, REMOVED TRUB	REBUILD/REMOVE	1
HUDSON	Y	DBN	REBUILT UTILIZED SPS, RECOVERED DBN 23 OLD STRUCTUR	REBUILD/REMOVE	1
HUDSON	Y	DBN	REBUILT UTILIZED SPS, RECOVERED NON CG SPS, REMOVED	REBUILD/REMOVE	1
HUDSON	Y	DBN	REBUILT UTILIZED SPS, RECOVERED OLD SPS, REMOVED TR	REBUILD/REMOVE	1
HUDSON	Y	DBN	REBUILT UTILIZED SPS, RECOVERED OLD SPS, REMOVED TR	REBUILD/REMOVE	4
HUDSON	Y	DBN	REBUILT UTILIZED SPS, REMOVED TRUB	REBUILD/REMOVE	2
HUDSON	Y	DBN	REBUILT UTILIZED SPW, RECOVERED OLD SPC AND TRLB	REBUILD/REMOVE	1
HUDSON	Y	DBN	REBUILT UTILIZED SPW, RECOVERED OLD SPS & SPC, REMOV	REBUILD/REMOVE	1
HUDSON	Y	DBN	REBUILT UTILIZED SPW, RECOVERED OLD SPS, REMOVED TR	REBUILD/REMOVE	3
HUDSON	Y	DBN	REBUILT UTILIZED SPW, RECOVERED OLD SPW	REBUILD/REMOVE	4
HUDSON	Y	DBN	REBUILT UTILIZED SPW, REMOVED TRLB	REBUILD/REMOVE	1
HUDSON	Y	DBN	REBUILT UTILIZED SPW, REMOVED TRUB	REBUILD/REMOVE	18
HUDSON	Y	DBN	REBUILT UTILIZING A SPW, RECOVERED OLD SPC, REMOVED	REBUILD/REMOVE	1
HUDSON	Y	DBN	REBUILT UTILIZING A SPW, RECOVERED OLD SPC, FOUND IN	REBUILD/REMOVE	1
HUDSON	Y	DBN	REBUILT UTILIZING A SPW, RECOVERED OLD SPS AND TRUB	REBUILD/REMOVE	1
HUDSON	Y	DBN	REBUILT UTILIZING A SPW, RECOVERED OLD SPS, RECOVER	REBUILD/REMOVE	1
HUDSON	Y	DBN	REBUILT UTILIZING A SPW, RECOVERED OLD SPS, REMOVED	REBUILD/REMOVE	1
HUDSON	Y	DBN	REBUILT UTILIZING A SPW, RECOVERED OLD SPW	REBUILD/REMOVE	7
HUDSON	Y	DBN	REBUILT UTILIZING A SPW, RECOVERED OLD SPW AND TRUB	REBUILD/REMOVE	2
HUDSON	Y	DBN	REBUILT UTILIZING A SPW, RECOVERED TRUB	REBUILD/REMOVE	26
HUDSON	Y	DBN	REBUILT UTILIZING A SPW, RECOVERED WRECKAGE, DETERI	REBUILD/REMOVE	1
HUDSON	Y	DBN	REBUILT UTILIZING A SPW, RECOVERED WRECKAGE, REMOVE	REBUILD/REMOVE	2
HUDSON	Y	DBN	REBUILT UTILIZING A SPW, REMOVED OLD SPS, REMOVED T	REBUILD/REMOVE	2
HUDSON	Y	DBN	REBUILT UTILIZING A SPW, REMOVED TRUB	REBUILD/REMOVE	8
HUDSON	Y	DBN	REBUILT UTILIZING ASPS, RECOVERED OLD SPC AND TRUB	REBUILD/REMOVE	1
HUDSON	Y	DBN	REBUILT UTILIZING ASPS, RECOVERED OLD SPS AND TRUB	REBUILD/REMOVE	1
HUDSON	Y	DBN	REBUILT UTILIZING ASPS, RECOVERED TRUB	REBUILD/REMOVE	2
HUDSON	Y	DBN	REBUILT UTILIZING ASPS, RECOVERED WRECKAGE, REMOVED	REBUILD/REMOVE	1
HUDSON	Y	DBN	REBUILT UTILIZING ASPS, REMOVED TRUB	REBUILD/REMOVE	1
HUDSON	Y	DBN	REBUILT UTILIZING SPW, REMOVED TRUB	REBUILD/REMOVE	2
HUDSON	Y	DBN	REBUILT, USING SPS, CUT OLD SPS A WATER EDGE TOP RE	REBUILD/REMOVE	1
HUDSON	Y	DBN	REBUILT/RELOCATED, RECOVERED OLD SPS CUT BY NOAA DI	REBUILD/REMOVE	2
HUDSON	Y	DBN	RELOCATED AID	REBUILD/REMOVE	1
HUDSON	Y	DBN	RELOCATED AID DUE TO ROCK LEDGE, UTILIZED SPW	REBUILD/REMOVE	1
HUDSON	Y	DBN	RELOCATED AID UTILIZED SPS, DISCONTINUED TEMP BUOY	REBUILD/REMOVE	1
HUDSON	Y	DBN	RELOCATED AID UTILIZING A A SPW, REMOVED TRUB	REBUILD/REMOVE	1
HUDSON	Y	DBN	RELOCATED UTILIZING A SPW, REMOVED OLD PVC PILE, RE	REBUILD/REMOVE	1
HUDSON	Y	DBN	STRAIGHTENED	REBUILD/REMOVE	9
HUDSON	Y	DBN	STRAIGHTENED SPS	REBUILD/REMOVE	5
HUDSON	Y	DBN	STRAIGHTENED SPS AND REPLACED DAYBOARDS	REBUILD/REMOVE	1
HUDSON	Y	DBN	STRAIGHTENED, CLEANED DAYBOARDS	REBUILD/REMOVE	1
HUDSON	Y	DBN	STRAIGHTENED, LEVELED DAYBOARDS	REBUILD/REMOVE	1
HUDSON	Y	DBN	STRAIGHTENED, REPLACED DAYBOARDS	REBUILD/REMOVE	4
HUDSON	Y	DBN	RECOVERED OLD SPC	REMOVE	1
HUDSON	Y	DBN	RECOVERED OLD SPS, SET TRUB DUE TO DARKNESS	REMOVE	1

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WLIC	WLIC Needed?	Aid Type	Indicated Action	Derived Action	Count
HUDSON	Y	DBN	REMOVED (02) SPS STRUCTURES CUT OFF BY NOAA DIVERS	REMOVE	1
HUDSON	Y	DBN	REMOVED OLD SPS CUT BY NOAA	REMOVE	1
HUDSON	Y	DBN	REMOVED SPS STRUCTURES CUT OFF BY NOAA DIVERS	REMOVE	2
HUDSON	Y	DBN	REMOVED TWO OLD SPW STRUCTURES FROM STA LAUDERDALE	REMOVE	1
HUDSON	Y	DBN	WRECKAGE REMOVAL, RECOVERED OLD SPC	REMOVE	1
HUDSON	Y	DBN	WRECKAGE REMOVAL, RECOVERED OLD SPS	REMOVE	2
HUDSON	Y	DBN	ATTEMPTED TO REBUILD, UNABLE DUE TO WX, SET TRUB	REPAIRED	2
HUDSON	Y	DBN	INCREASED HIEGHT OF STEEL PILE	REPAIRED	1
HUDSON	Y	DBN	RENUMBERED, REPLACED DAYBOARDS (WLIC REQUEST FOR PR	REPAIRED	1
HUDSON	Y	DBN	REPAIRED PILING AND REPLACED DAYBOARDS	REPAIRED	1
HUDSON	Y	DBN	REPAIRED PLATFORM	REPAIRED	1
HUDSON	Y	DBN	REPLACED PLATFORM, REMOVED OLD CONCRETE PLATFORM	REPAIRED	1
HUDSON	Y	DBN	STRAIGHTENED, REPLACED DAYBOARDS, REMOVED TRUB	REPAIRED	1
HUDSON	Y	DBN	UNABLE TO REBUILD DUE TO WX SET TRUB	REPAIRED	1
HUDSON	Y	LT	DISCONTINUED AID, REMOVED OLD SPS	DISCONTINUED	1
HUDSON	Y	LT	ESTABLISHED AID UTILIZING ASPS	ESTABLISHED	1
HUDSON	Y	LT	ESTABLISHED AID UTILIZING ASPS, DISCONTINUED TEMP H	ESTABLISHED	1
HUDSON	Y	LT	ESTABLISHED LT UTILIZING AMPS AND 5 FT TOWER SECTIO	ESTABLISHED	1
HUDSON	Y	LT	ESTABLISHED SPS LT	ESTABLISHED	1
HUDSON	Y	LT	ESTABLISHED UTILIZING ASPS	ESTABLISHED	1
HUDSON	Y	LT	CONDUCTED SURVEY OF SHOAL, SHOAL STILL EXISTS, MSG	INSPECTION	1
HUDSON	Y	LT	SERVICED LT, WAS FLASHING DURING DAYLIGHT, BAD D.L.	INSPECTION	1
HUDSON	Y	LT	REBUILT AID UTILIZING ASPS	REBUILD	1
HUDSON	Y	LT	COMPLETED REBUILD OF MPS	REBUILD	1
HUDSON	Y	LT	COMPLETED REBUILDING LT 7	REBUILD	1
HUDSON	Y	LT	CONVERTED OLD SPS DBN TO SPS LT	REBUILD	1
HUDSON	Y	LT	CONVERTED SPS TO AMPS STRUCTURE	REBUILD	1
HUDSON	Y	LT	CONVERTED TO MPS	REBUILD	1
HUDSON	Y	LT	MAJOR RENOVATION/REPLACED CROSS MEMBERS/REBUILT PLA	REBUILD	1
HUDSON	Y	LT	REBUILT AID UTILIZING A SPS, CUT OLD SPS ABOVE WATE	REBUILD	1
HUDSON	Y	LT	REBUILT AID UTILIZING ASPS, CUT OLD SPS OFF AT WATE	REBUILD	1
HUDSON	Y	LT	REBUILT MPW PLATFORM AND REPLACED LADDER	REBUILD	1
HUDSON	Y	LT	REBUILT PLATFORM AND LADDER ON MPW	REBUILD	1
HUDSON	Y	LT	REBUILT UTILIZING A SPS, CUT OLD SPS ABOVE WATERLIN	REBUILD	1
HUDSON	Y	LT	REBUILT UTILIZING AMPS	REBUILD	1
HUDSON	Y	LT	REBUILT UTILIZING ASPS, CUT OFF OLD SPS ABOVE WATER	REBUILD	2
HUDSON	Y	LT	REBUILT UTILIZING ASPS, OLD SPS DETERIORATED	REBUILD	1
HUDSON	Y	LT	REBUILT/RELOCATED MPS	REBUILD	1
HUDSON	Y	LT	REBUILT/RELOCATED SPS	REBUILD	1
HUDSON	Y	LT	REPLACED/REBUILT PLATFORM, REPLACED DAYBOARDS	REBUILD	1
HUDSON	Y	LT	CUT AND REMOVED OLD MPS, DROVE 2 PILES OF NEW MPS	REBUILD/REMOVE	1
HUDSON	Y	LT	REBUILD UTILIZING A MPS, RECOVERED OLD CAST IRON MP	REBUILD/REMOVE	1
HUDSON	Y	LT	REBUILD UTILIZING A MPW, RECOVERED OLD SPS AND TRLB	REBUILD/REMOVE	1
HUDSON	Y	LT	REBUILT AS MPS WITH 5 FT TWR, RECOVERED OLD MPW	REBUILD/REMOVE	1
HUDSON	Y	LT	REBUILT AS SPS, RECOVERED 4 OF 5 MPS WRECKAGE, REMOV	REBUILD/REMOVE	1
HUDSON	Y	LT	REBUILT AS SPW, RECOVERED OLD SPC, REMOVED TRUB	REBUILD/REMOVE	1
HUDSON	Y	LT	REBUILT AS SPW, RECOVERED OLD SPS, REMOVED TRUB	REBUILD/REMOVE	2
HUDSON	Y	LT	REBUILT AS SPW, SEARCHED FOR OLD SPC, REMOVED TRUB	REBUILD/REMOVE	1
HUDSON	Y	LT	REBUILT MPS LT, REMOVED WRECKAGE	REBUILD/REMOVE	1
HUDSON	Y	LT	REBUILT MPS LT, REMOVED WRECKAGE	REBUILD/REMOVE	3
HUDSON	Y	LT	REBUILT MPS, REMOVED MPS WRECKAGE	REBUILD/REMOVE	5
HUDSON	Y	LT	REBUILT UTILIZED MPS, REMOVED TRLB (HAD BEEN REMOVE	REBUILD/REMOVE	1
HUDSON	Y	LT	REBUILT UTILIZED SPS, RECOVERED OLD SPC, REMOVED TR	REBUILD/REMOVE	1
HUDSON	Y	LT	REBUILT UTILIZED SPS, RECOVERED OLD SPS, REMOVED TR	REBUILD/REMOVE	3
HUDSON	Y	LT	REBUILT UTILIZED SPW, RECOVERED OLD SPS, REMOVED TR	REBUILD/REMOVE	2
HUDSON	Y	LT	REBUILT UTILIZED SPW, REMOVED TRUB	REBUILD/REMOVE	2
HUDSON	Y	LT	REBUILT UTILIZING (02) SPW, RECOVERED TRUB	REBUILD/REMOVE	1
HUDSON	Y	LT	REBUILT UTILIZING A SPS, RECOVERED OLD MPW	REBUILD/REMOVE	1
HUDSON	Y	LT	REBUILT UTILIZING A SPS, RECOVERED OLD SPS, REMOVED	REBUILD/REMOVE	1
HUDSON	Y	LT	REBUILT UTILIZING A SPW, RECOVERED OLD SPC, REMOVED	REBUILD/REMOVE	2
HUDSON	Y	LT	REBUILT UTILIZING A SPW, RECOVERED OLD SPS, REMOVED	REBUILD/REMOVE	1
HUDSON	Y	LT	REBUILT UTILIZING A SPW, RECOVERED OLD SPS, REMOVED	REBUILD/REMOVE	1

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WLIC	WLIC Needed?	Aid Type	Indicated Action	Derived Action	Count
HUDSON	Y	LT	REBUILT UTILIZING AMPS, RECOVERED OLD MPW	REBUILD/REMOVE	1
HUDSON	Y	LT	REBUILT UTILIZING ASPS, RECOVERED OLD MPW	REBUILD/REMOVE	1
HUDSON	Y	LT	REBUILT UTILIZING ASPS, RECOVERED OLD SPS	REBUILD/REMOVE	1
HUDSON	Y	LT	REBUILT UTILIZING ASPS, RECOVERED OLD SPS AND TRLB	REBUILD/REMOVE	1
HUDSON	Y	LT	REBUILT UTILIZING ASPS, RECOVERED OLD SPS AND TRUB	REBUILD/REMOVE	1
HUDSON	Y	LT	REBUILT UTILIZING ASPS, RECOVERED OLD SPS, 1 SPS RE	REBUILD/REMOVE	1
HUDSON	Y	LT	REBUILT UTILIZING ASPS, RECOVERED OLD SPS, RECOVERE	REBUILD/REMOVE	1
HUDSON	Y	LT	REBUILT UTILIZING ASPS, RECOVERED TRLB	REBUILD/REMOVE	2
HUDSON	Y	LT	REBUILT UTILIZING ASPS, REMOVED TRUB, SEARCH FOR OL	REBUILD/REMOVE	1
HUDSON	Y	LT	REBUILT UTILIZING ASPS, REMOVED SPS WRECKAGE	REBUILD/REMOVE	1
HUDSON	Y	LT	REBUILT, USING SPS, RECOVERED OLD MPW STRUCTURE	REBUILD/REMOVE	1
HUDSON	Y	LT	REMOVED WRECKAGE, STARTED REBUILDING MPS	REBUILD/REMOVE	1
HUDSON	Y	LT	STRAIGHTENED	REBUILD/REMOVE	1
HUDSON	Y	LT	STRAIGHTENED AID, LEVELED PLATFORM AND DAYBOARDS	REBUILD/REMOVE	1
HUDSON	Y	LT	STRAIGHTENED AND REPLACED LOW MAST KIT	REBUILD/REMOVE	1
HUDSON	Y	LT	STRAIGHTENED AND REPLACED PLATFORM	REBUILD/REMOVE	1
HUDSON	Y	LT	STRAIGHTENED AND SERVICED	REBUILD/REMOVE	1
HUDSON	Y	LT	STRAIGHTENED SPS	REBUILD/REMOVE	1
HUDSON	Y	LT	STRAIGHTENED, LEVELED PLATFORM, LANTERN AND DAYBOA	REBUILD/REMOVE	1
HUDSON	Y	LT	STRAIGHTENED, LEVELED PLATFORM AND SERVICED	REBUILD/REMOVE	1
HUDSON	Y	LT	STRAIGHTENED, SERVICED	REBUILD/REMOVE	1
HUDSON	Y	LT	RECOVERED WRECKAGE OF OLD SPC AND PLATFORM LOCATED	REMOVE	1
HUDSON	Y	LT	REMOVED PREVIOUS WRECKAGE, OLD PILE & PLATFORM	REMOVE	1
HUDSON	Y	LT	REMOVED SPS STRUCTURES CUT OFF BY NOAA DIVERS	REMOVE	1
HUDSON	Y	LT	REMOVED WRECKAGE, ONE PIECE OF PILE REMAINS	REMOVE	1
HUDSON	Y	LT	WRECKAGE REMOVAL, RECOVERED OLD SPC	REMOVE	1
HUDSON	Y	LT	WRECKAGE REMOVAL, RECOVERED OLD SPS	REMOVE	2
HUDSON	Y	LT	CUTTING MPS	REPAIRED	1
HUDSON	Y	LT	FABRICATED AND INSTALLED WOOD DECKING ON TWO PLATFO	REPAIRED	1
HUDSON	Y	LT	ADDED ONE SPW	REPAIRED	1
HUDSON	Y	LT	COMMENCED REMOVAL WITH USN DIVERS CUTTING AID UNDER	REPAIRED	1
HUDSON	Y	LT	CUTTING MPS	REPAIRED	1
HUDSON	Y	LT	DROVE FIRST 2 PILES OF MPS	REPAIRED	1
HUDSON	Y	LT	FINISHED BUILDING MPS, NOAA, NWS, TENDER WORK ORDER	REPAIRED	1
HUDSON	Y	LT	INCREASED HEIGHT OF STEEL PILE	REPAIRED	1
HUDSON	Y	LT	INSTALLED NEW TOWER, LADDER AND DECKING	REPAIRED	1
HUDSON	Y	LT	INSTALLED SPECIAL TEMPLATE CAP, REPLACED DAYB., SER	REPAIRED	1
HUDSON	Y	LT	PLACED MPS TEMPLATE ON AID, WX PROHIBITED PILE DRI	REPAIRED	1
HUDSON	Y	LT	REPLACED SPECIAL 3 PILE CONCRETE PLATFORM	REPAIRED	1
HUDSON	Y	LT	RENUMBERED, REPLACED DAYBOARDS (WLIC REQUEST FOR PR	REPAIRED	1
HUDSON	Y	LT	REPAIRED DECK AND INSTALLED LADDER	REPAIRED	1
HUDSON	Y	LT	REPAIRED LADDER, PLATFORM AND INSTALLED SAF-T-CLIMB	REPAIRED	1
HUDSON	Y	LT	REPAIRED MPW BY REBUILDING PLATFORM AND REPLACING L	REPAIRED	1
HUDSON	Y	LT	REPAIRED MPW PLATFORM AND REPLACED LADDER	REPAIRED	1
HUDSON	Y	LT	REPAIRED PLATFORM AND ATTACHED SOLAR PANEL	REPAIRED	1
HUDSON	Y	LT	REPLACE PLATFORM ON SPC	REPAIRED	1
HUDSON	Y	LT	REPLACED AND ALIGNED (2) 6NG DAYBOARDS, REPLACED LA	REPAIRED	1
HUDSON	Y	LT	REPLACED BOTTOM LADDER SECTION	REPAIRED	1
HUDSON	Y	LT	REPLACED LADDER	REPAIRED	1
HUDSON	Y	LT	REPLACED LADDER AND REPAIRED STRUCTURE	REPAIRED	3
HUDSON	Y	LT	REPLACED LOW MAST KIT	REPAIRED	3
HUDSON	Y	LT	REPLACED LOWMAST KIT	REPAIRED	2
HUDSON	Y	LT	REPLACED LOWMAST KIT ON SPC	REPAIRED	1
HUDSON	Y	LT	REPLACED MPS PLATFORM AND FA 240	REPAIRED	1
HUDSON	Y	LT	REPLACED MPW PLATFORM	REPAIRED	1
HUDSON	Y	LT	REPLACED PLATFORM	REPAIRED	9
HUDSON	Y	LT	REPLACED PLATFORM AND LADDER	REPAIRED	2
HUDSON	Y	LT	REPLACED PLATFORM AND LADDER INSPECTED SPS STRUCTUR	REPAIRED	1
HUDSON	Y	LT	REPLACED PLATFORM AND MISSING DAYBOARDS	REPAIRED	1
HUDSON	Y	LT	REPLACED TOWER AND LADDER	REPAIRED	1
HUDSON	Y	LT	REPLACED LOW MAST KIT	REPAIRED	1
HUDSON	Y	LT	REPLACED PLATFORM AND LADDER	REPAIRED	1

Actions and Derived Actions for
HUDSON, MALLET and SAGINAW Logs

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WLIC	WLIC Needed?	Aid Type	Indicated Action	Derived Action	Count
HUDSON	Y	LT	REPLACED PLATFORM AND SERVICED	REPAIRED	1
HUDSON	Y	LT	SERVICED REPLACED LADDER AND DAYBOARDS	REPAIRED	1
HUDSON	Y	LT	STARTED CUTTING OLD MPS AND REBUILDING NEW MPS	REPAIRED	1
HUDSON	Y	LT	UNABLE TO RECOVER REMAINING 1 PILE DUE TO WX, NOT A	REPAIRED	1
HUDSON	Y	Total			349
HUDSON		Total			663
MALLET	N	DBN	1000 LB SINKER	INSPECTION	1
MALLET	N	DBN	6/LWP	INSPECTION	1
MALLET	N	LB	REPLACED FLASHER	REPLACED	1
MALLET	N	LT	4/LWP	INSPECTION	1
MALLET	N	LT	5/LWP	INSPECTION	1
MALLET	N	LT	FIXED/REPLACED FLASHER	INSPECTION	1
MALLET	N	LT	LWP	INSPECTION	1
MALLET	N	LT	NEW 6K6R'S	INSPECTION	1
MALLET	N	LT	NEW BOARDS/LWP	INSPECTION	1
MALLET	N	LT	REPAIRED HEADER/SERV.	INSPECTION	1
MALLET	N	LT	SCPR/ALL	INSPECTION	1
MALLET	N	LT	SERVICED AID	INSPECTION	1
MALLET	N	LT	SET TR: B/08	INSPECTION	1
MALLET	N	LT	SINKER	INSPECTION	1
MALLET	N	LT	CHECKED ????????	POSITION CHECK	1
MALLET	N	LT	POC CHECK	POSITION CHECK	1
MALLET	N	LT	POS CHECK	POSITION CHECK	21
MALLET	N	LT	POS CHECK/CONFIRMATION	POSITION CHECK	1
MALLET	N	LT	POS CHECK/ON	POSITION CHECK	1
MALLET	N	LT	POS CHECK/ON STA	POSITION CHECK	1
MALLET	N	LT	POS CHECK/ONSTA	POSITION CHECK	1
MALLET	N	LT	POS. CHECK	POSITION CHECK	2
MALLET	N	Port			1
MALLET	N	ULB	MISS ALL/13	ESTABLISHED (MISSI	1
MALLET	N	ULB	MISSING LWP	ESTABLISHED (MISSI	1
MALLET	N	ULB	MISSING/11/LWP	ESTABLISHED (MISSI	1
MALLET	N	ULB	MISSING/12	ESTABLISHED (MISSI	3
MALLET	N	ULB	MISSING/12/SCPR	ESTABLISHED (MISSI	2
MALLET	N	ULB	MISSING/13/SCPR	ESTABLISHED (MISSI	1
MALLET	N	ULB	MISSING/14/SCPR	ESTABLISHED (MISSI	1
MALLET	N	ULB	MISSING/ALL	ESTABLISHED (MISSI	1
MALLET	N	ULB	MISSING/GCFR/13	ESTABLISHED (MISSI	1
MALLET	N	ULB	MISSING/LWP	ESTABLISHED (MISSI	1
MALLET	N	ULB	MISSING/SCPR/12	ESTABLISHED (MISSI	1
MALLET	N	ULB	MISSING/SCPR/13	ESTABLISHED (MISSI	1
MALLET	N	ULB	MISSING/SNPR/9	ESTABLISHED (MISSI	1
MALLET	N	ULB	12/HULL	INSPECTION	2
MALLET	N	ULB	12/HULL/SCPR	INSPECTION	3
MALLET	N	ULB	12/LWP	INSPECTION	1
MALLET	N	ULB	13/LWP	INSPECTION	1
MALLET	N	ULB	13/LWP/ONSTA	INSPECTION	1
MALLET	N	ULB	14 HULL/SCPR	INSPECTION	1
MALLET	N	ULB	ALL	INSPECTION	7
MALLET	N	ULB	ALL 6CFR/13	INSPECTION	4
MALLET	N	ULB	ALL 6CPR/13	INSPECTION	2
MALLET	N	ULB	ALL SCPR/13	INSPECTION	1
MALLET	N	ULB	ALL SCPR/13	INSPECTION	1
MALLET	N	ULB	ALL/13	INSPECTION	7
MALLET	N	ULB	FWP	INSPECTION	1
MALLET	N	ULB	HULL	INSPECTION	9
MALLET	N	ULB	HULL-SNPR	INSPECTION	1
MALLET	N	ULB	HULL/12	INSPECTION	5
MALLET	N	ULB	HULL/13	INSPECTION	5
MALLET	N	ULB	HULL/14/LWP	INSPECTION	1

Actions and Derived Actions for
HUDSON, MALLET and SAGINAW Logs

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WLIC	WLIC Needed?	Aid Type	Indicated Action	Derived Action	Count
MALLET	N	ULB	HULL/6CFR/13	INSPECTION	3
MALLET	N	ULB	HULL/6CPR/12	INSPECTION	1
MALLET	N	ULB	HULL/6CPR/13	INSPECTION	2
MALLET	N	ULB	HULL/6CPR/14	INSPECTION	1
MALLET	N	ULB	HULL/7	INSPECTION	1
MALLET	N	ULB	HULL/ALL	INSPECTION	2
MALLET	N	ULB	HULL/ALL/12	INSPECTION	2
MALLET	N	ULB	HULL/ALL/13	INSPECTION	3
MALLET	N	ULB	HULL/SCPR/11	INSPECTION	1
MALLET	N	ULB	HULL/SCPR/12	INSPECTION	2
MALLET	N	ULB	HULL/SCPR/13	INSPECTION	2
MALLET	N	ULB	HULL/SCPR/14/FOUND OFFSTA	INSPECTION	2
MALLET	N	ULB	HULL/SCPR/15	INSPECTION	1
MALLET	N	ULB	HULL/SINKER	INSPECTION	3
MALLET	N	ULB	INP/12	INSPECTION	1
MALLET	N	ULB	INSP./LWP/12	INSPECTION	1
MALLET	N	ULB	INSP/12	INSPECTION	4
MALLET	N	ULB	INSP/ON/12	INSPECTION	1
MALLET	N	ULB	INSP/POS??	INSPECTION	1
MALLET	N	ULB	None	INSPECTION	1
MALLET	N	ULB	ONSTA/INSP/POS CHECK	INSPECTION	1
MALLET	N	ULB	SCPR/12	INSPECTION	1
MALLET	N	ULB	SCPR/12/LWP	INSPECTION	1
MALLET	N	ULB	SCPR/13/LWP	INSPECTION	1
MALLET	N	ULB	SCPR/HULL/12	INSPECTION	4
MALLET	N	ULB	SERV	INSPECTION	9
MALLET	N	ULB	SERV/11	INSPECTION	5
MALLET	N	ULB	SERV/11FT	INSPECTION	1
MALLET	N	ULB	SERV/12	INSPECTION	5
MALLET	N	ULB	SERV/12FT	INSPECTION	14
MALLET	N	ULB	SERV/13	INSPECTION	7
MALLET	N	ULB	SERV/13FT	INSPECTION	1
MALLET	N	ULB	SERV/16	INSPECTION	1
MALLET	N	ULB	SERV/4FT	INSPECTION	1
MALLET	N	ULB	SERV/REPOS/11FT	INSPECTION	1
MALLET	N	ULB	SERVICED/HULL/12	INSPECTION	1
MALLET	N	ULB	SERVICED/HULL/13	INSPECTION	16
MALLET	N	ULB	SERVICED/HULL/14	INSPECTION	3
MALLET	N	ULB	SERVICED/HULL/15	INSPECTION	2
MALLET	N	ULB	SERVICED/HULL/16	INSPECTION	1
MALLET	N	ULB	SINKER/HULL	INSPECTION	1
MALLET	N	ULB	ALL/MOORING LOST/12	MOORING INSPECTION	1
MALLET	N	ULB	CHAIN/6CPR/13	MOORING INSPECTION	1
MALLET	N	ULB	MOOR INSP./7	MOORING INSPECTION	1
MALLET	N	ULB	MOORING/12	MOORING INSPECTION	1
MALLET	N	ULB	MOORINGS	MOORING INSPECTION	8
MALLET	N	ULB	MOORINGS/12	MOORING INSPECTION	1
MALLET	N	ULB	MOORINGS/13	MOORING INSPECTION	1
MALLET	N	ULB	REPLACED SINKER	MOORING INSPECTION	1
MALLET	N	ULB	REPLACED SINKER/13	MOORING INSPECTION	1
MALLET	N	ULB	REPLACED SINKER/15	MOORING INSPECTION	1
MALLET	N	ULB	REPOS/2 SINKERS/11	MOORING INSPECTION	1
MALLET	N	ULB	SCPR SINKER REPLACES/ALL	MOORING INSPECTION	1
MALLET	N	ULB	SINKER/15	MOORING INSPECTION	1
MALLET	N	ULB	SINKER/ALL	MOORING INSPECTION	1
MALLET	N	ULB	SINKER/POS CHECK	MOORING INSPECTION	1
MALLET	N	ULB	MISSING CHECK	POSITION CHECK	1
MALLET	N	ULB	ONSTA/11/LWP	POSITION CHECK	1
MALLET	N	ULB	ONSTA/14/LWP	POSITION CHECK	1
MALLET	N	ULB	POS CHECK	POSITION CHECK	2
MALLET	N	ULB	POS CHECK/HULL/12	POSITION CHECK	1
MALLET	N	ULB	POS. ?????/12	POSITION CHECK	1

Actions and Derived Actions for
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WLIC	WLIC Needed?	Aid Type	Indicated Action	Derived Action	Count
MALLET	N	ULB	POS. VER. SNPR/12	POSITION CHECK	1
MALLET	N	ULB	POS. VER./ALL SNPR/12	POSITION CHECK	1
MALLET	N	ULB	POS. VER./HULL/SNPR/12	POSITION CHECK	1
MALLET	N	ULB	POS./12	POSITION CHECK	3
MALLET	N	ULB	FOUND DAMAGED REPLACED ALL	REPLACED	1
MALLET	N	ULB	NEW HULL	REPLACED	9
MALLET	N	ULB	NEW HULL/SCPR/13	REPLACED	2
MALLET	N	ULB	REPLACED ALL	REPLACED	1
MALLET	N	ULB	REPLACED HULL/SNPR	REPLACED	1
MALLET	N	ULB	15/RESET/LWP	RESET	1
MALLET	N	ULB	????/OFFSTA/STP	RESET	1
MALLET	N	ULB	FOUND MISSING	RESET	1
MALLET	N	ULB	FOUND OFFSTA/LWP/12	RESET	1
MALLET	N	ULB	MISSING RESET L??	RESET	2
MALLET	N	ULB	OFFSTA	RESET	1
MALLET	N	ULB	OFFSTA SINCKE/SCPR/12	RESET	1
MALLET	N	ULB	OFFSTA/12/RESET	RESET	2
MALLET	N	ULB	OFFSTA/HULL ALL	RESET	1
MALLET	N	ULB	OFFSTA/LWP	RESET	1
MALLET	N	ULB	OFFSTA/RESET ON AP	RESET	1
MALLET	N	ULB	OFFSTA/SINNER/13	RESET	1
MALLET	N	ULB	RELOCATED/ALL	RESET	2
MALLET	N	ULB	REPOS	RESET	4
MALLET	N	ULB	REPOS/11	RESET	1
MALLET	N	ULB	REPOS/HULL ALL/12	RESET	1
MALLET	N	ULB	RESET 8.5 LWP	RESET	1
MALLET	N	ULB	RESET HULL	RESET	1
MALLET	N	ULB	RESET HULL/12	RESET	4
MALLET	N	ULB	RESET HULL/SCFR/12	RESET	2
MALLET	N	ULB	RESET HULL/SNPR/12	RESET	2
MALLET	N	ULB	RESET ON STA/12	RESET	1
MALLET	N	ULB	RESET/12/LWP	RESET	2
MALLET	N	ULB	RESET/14/LWP	RESET	1
MALLET	N	ULB	RESET/15/LWP	RESET	1
MALLET	N	ULB	RESET/16/LWP	RESET	1
MALLET	N	ULB	RESET/19/LWP	RESET	1
MALLET	N	ULB	RESET/ALL	RESET	1
MALLET	N	ULB	RESET/HULL/12	RESET	1
MALLET	N	ULB	SNPR/OFFSTA/12/????	RESET	1
MALLET	N	Total			316
MALLET	Y	DBN	DISCONT.	DISCONTINUED	1
MALLET	Y	DBN	ESTABLISHES	ESTABLISHED	3
MALLET	Y	DBN	DESTROYED/11	REBUILT	1
MALLET	Y	DBN	FOUND DEST. REMOVED TRUB REBUILT	REBUILT	2
MALLET	Y	DBN	FOUND DESTROYED/RBLT/9	REBUILT	1
MALLET	Y	DBN	RBLT/LWP/8	REBUILT	1
MALLET	Y	DBN	RBLT LWP	REBUILT	1
MALLET	Y	DBN	RBLT/11/LWP	REBUILT	1
MALLET	Y	DBN	RBLT/14	REBUILT	1
MALLET	Y	DBN	RBLT/15	REBUILT	1
MALLET	Y	DBN	RBLT/17	REBUILT	1
MALLET	Y	DBN	RBLT/7	REBUILT	1
MALLET	Y	DBN	RBLT/LWP	REBUILT	2
MALLET	Y	DBN	RBLT/LWP/11	REBUILT	1
MALLET	Y	DBN	RBLT/LWP/4	REBUILT	1
MALLET	Y	DBN	RBLT/POS CHECK/DAY ????	REBUILT	1
MALLET	Y	DBN	REBLT	REBUILT	1
MALLET	Y	DBN	REBUILT	REBUILT	1
MALLET	Y	DBN	REBUILT AID	REBUILT	4
MALLET	Y	DBN	REBUILT/5/LWP	REBUILT	1
MALLET	Y	DBN	REBUILT/LWP/12	REBUILT	1

Actions and Derived Actions for
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WLIC	WLIC Needed?	Aid Type	Indicated Action	Derived Action	Count
MALLET	Y	DBN	REBUILT/LWP/7	REBUILT	1
MALLET	Y	DBN	RFIP/RBLT/???/3	REBUILT	1
MALLET	Y	DBN	REPAIRED	REPAIRED	1
MALLET	Y	DBN	REPLACED DBDS/LWP	REPAIRED	1
MALLET	Y	LT	SERV. ESTABLISHED NEW	ESTABLISHED	1
MALLET	Y	LT	3 RBLT LWP	REBUILT	1
MALLET	Y	LT	DESTROYED LWP	REBUILT	1
MALLET	Y	LT	FOUND DEST. REMOVED TRUB REBUILT	REBUILT	1
MALLET	Y	LT	FOUND DEST/REBUILT	REBUILT	1
MALLET	Y	LT	RBLT	REBUILT	2
MALLET	Y	LT	RBLT ?????/POS CHECK	REBUILT	1
MALLET	Y	LT	RBLT/10/LWP	REBUILT	1
MALLET	Y	LT	RBLT/12	REBUILT	1
MALLET	Y	LT	RBLT/13	REBUILT	1
MALLET	Y	LT	RBLT/20	REBUILT	1
MALLET	Y	LT	RBLT/4/LWP	REBUILT	1
MALLET	Y	LT	RBLT/DESTR./6	REBUILT	1
MALLET	Y	LT	RBLT/LWP	REBUILT	4
MALLET	Y	LT	RBLT/LWP/1	REBUILT	1
MALLET	Y	LT	RBLT/LWP/4	REBUILT	1
MALLET	Y	LT	RBLT/NO WRECKAGE	REBUILT	1
MALLET	Y	LT	RBLT/WP/11FT	REBUILT	1
MALLET	Y	LT	REBLT	REBUILT	1
MALLET	Y	LT	REBUILT	REBUILT	4
MALLET	Y	LT	REBUILT AID	REBUILT	4
MALLET	Y	LT	REBUILT AID/LWP	REBUILT	1
MALLET	Y	LT	REBUILT CAGE/1	REBUILT	1
MALLET	Y	LT	REBUILT ON OLD STRUCTURE	REBUILT	1
MALLET	Y	LT	REBUILT ON RETURN EVELED LANTERN	REBUILT	1
MALLET	Y	LT	REBUILT RECOVERED WK6TRLB	REBUILT	2
MALLET	Y	LT	REBUILT REMOVED	REBUILT	1
MALLET	Y	LT	REBUILT/10/LWP	REBUILT	1
MALLET	Y	LT	REBUILT/11/LWP	REBUILT	1
MALLET	Y	LT	REBUILT/12	REBUILT	1
MALLET	Y	LT	REBUILT/17	REBUILT	1
MALLET	Y	LT	REBUILT/8/LWP	REBUILT	1
MALLET	Y	LT	REBUILT/LWP/5	REBUILT	1
MALLET	Y	LT	REBUILT/LWP/6	REBUILT	2
MALLET	Y	LT	REBUILT/NO WRECK FOUND/DESTROYED	REBUILT	1
MALLET	Y	LT	REBUILT/ONSTA/4	REBUILT	1
MALLET	Y	LT	REGUILT/ADDED/WIRE	REBUILT	1
MALLET	Y	LT	ADDED REPRO LADDER/LWP	REPAIRED	1
MALLET	Y	LT	ADDED TWO PIKES	REPAIRED	1
MALLET	Y	LT	NEW LADDER	REPAIRED	1
MALLET	Y	LT	RCP	REPAIRED	1
MALLET	Y	LT	REPAIRED LADDER	REPAIRED	1
MALLET	Y	LT	REPAIRED LWP	REPAIRED	1
MALLET	Y	LT	REPAIRED/10	REPAIRED	1
MALLET	Y	LT	REPLACED HEADER	REPAIRED	2
MALLET	Y	LT	REPLACED LADDER	REPAIRED	1
MALLET	Y	LT	RPRD	REPAIRED	1
MALLET	Y	LT	RPRD/HEADER/LWP	REPAIRED	1
MALLET	Y	LT	RPRD/LWP/9	REPAIRED	1
MALLET	Y	LT	RELOCATED	RESET	1
MALLET	Y	ULB	RBLT/12	REBUILT	1
MALLET	Y	ULB	REGUILT/20/LWP/?????	REBUILT	1
MALLET	Y	Total			97
MALLET		Total			413
SAGINAW	N	BUOY	Annual Moor	/MOORING	1
SAGINAW	N	BUOY	Annual Moor.	/MOORING	3

Actions and Derived Actions for
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WLIC	WLIC Needed?	Aid Type	Indicated Action	Derived Action	Count
SAGINAW	N	BUOY	Annual Mooring	/MOORING	24
SAGINAW	N	BUOY	Annual New Mooring	/MOORING	1
SAGINAW	N	BUOY	Annual- Moor.	/MOORING	2
SAGINAW	N	BUOY	Annual/Moor	/MOORING	4
SAGINAW	N	BUOY	Annual/New Mooring	/MOORING	2
SAGINAW	N	BUOY	Inspect- New Mooring	/MOORING	1
SAGINAW	N	BUOY	Inspect/New Mooring	/MOORING	13
SAGINAW	N	BUOY	Moor. Annual	/MOORING	7
SAGINAW	N	BUOY	Moor/Annual	/MOORING	13
SAGINAW	N	BUOY	Mooring pos. Check	/MOORING	1
SAGINAW	N	BUOY	Mooring re-set	/MOORING	1
SAGINAW	N	BUOY	Mooring reset	/MOORING	3
SAGINAW	N	BUOY	Off Sta. Reset Annual/Mooring	/MOORING	1
SAGINAW	N	BUOY	Recieved w/3cr New Mooring	/MOORING	1
SAGINAW	N	BUOY	Relieved/Mooring Insp	/MOORING	1
SAGINAW	N	BUOY	Reset/new boom & moor	/MOORING	2
SAGINAW	N	BUOY	Annual Relief/Mooring	/MOORING/RELIEF	1
SAGINAW	N	BUOY	Annual Relief/New Mooring	/MOORING/RELIEF	1
SAGINAW	N	BUOY	Annual- Relief- Moor.	/MOORING/RELIEF	1
SAGINAW	N	BUOY	Inspect Relief/New Mooring	/MOORING/RELIEF	1
SAGINAW	N	BUOY	Moor/Relief	/MOORING/RELIEF	11
SAGINAW	N	BUOY	Mooring Relief Reset	/MOORING/RELIEF	1
SAGINAW	N	BUOY	Relief Moor	/MOORING/RELIEF	4
SAGINAW	N	BUOY	Relief Mooring	/MOORING/RELIEF	4
SAGINAW	N	BUOY	Relief Replaced Mooring	/MOORING/RELIEF	1
SAGINAW	N	BUOY	Relief- Moor. Annual	/MOORING/RELIEF	4
SAGINAW	N	BUOY	Relief/New Mooring	/MOORING/RELIEF	19
SAGINAW	N	BUOY	Relief	/RELIEF	3
SAGINAW	N	BUOY	Disc B	DISC BUOY	1
SAGINAW	N	BUOY	Removed	DISCONTINUED	1
SAGINAW	N	BUOY	Est/Disc B	ESTABLISHED	1
SAGINAW	N	BUOY	Established	ESTABLISHED	1
SAGINAW	N	BUOY	Inspect	INSPECTION	1
SAGINAW	N	BUOY		None	3
SAGINAW	N	BUOY	Unable to Build	None	1
SAGINAW	N	BUOY	Pos. Check	POSITION CHECK	1
SAGINAW	N	BUOY	Position chk.	POSITION CHECK	1
SAGINAW	N	BUOY	Repaired	REPAIRED	1
SAGINAW	N	BUOY	Repaired Hole	REPAIRED	1
SAGINAW	N	BUOY	Sinking hole Repaired	REPAIRED	1
SAGINAW	N	BUOY	Trubed	REPAIRED	1
SAGINAW	N	BUOY	Relieved	REPLACED	7
SAGINAW	N	BUOY	Relieved w/ l/lr	REPLACED	1
SAGINAW	N	BUOY	Replaced	REPLACED	2
SAGINAW	N	BUOY	Off Sta. Re-set o/s	RESET	1
SAGINAW	N	BUOY	Positioned	RESET	1
SAGINAW	N	BUOY	Posn/check reset	RESET	1
SAGINAW	N	BUOY	Re-set	RESET	1
SAGINAW	N	BUOY	Re-set o/s	RESET	1
SAGINAW	N	BUOY	Re-set unable to posn./wk	RESET	1
SAGINAW	N	BUOY	Reset	RESET	3
SAGINAW	N	BUOY	Reset on AP	RESET	1
SAGINAW	N	BUOY	Reset.	RESET	1
SAGINAW	N	DBN	Found Structurly Sound	None	1
SAGINAW	N	LT	Recovered Wkg. Disc. 5x11 Temp	DISC BUOY	1
SAGINAW	N	LT	Batt.Stolen- Re-lighted	INSPECTION	1
SAGINAW	N	LT	Re-lite	INSPECTION	2
SAGINAW	N	LT	Relighted	INSPECTION	1
SAGINAW	N	LT	Relite	INSPECTION	1
SAGINAW	N	LT		None	8
SAGINAW	N	LT	Ant. Mobile/ Rebuilt	None	1
SAGINAW	N	LT	Recharge	RECHARGED	1

Actions and Derived Actions for
HUDSON, MALLET and SAGINAW Logs

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WLIC	WLIC Needed?	Aid Type	Indicated Action	Derived Action	Count
SAGINAW	N	LT	Recharged	RECHARGED	3
SAGINAW	N	Total			188
SAGINAW	Y	DBN	Est	ESTABLISHED	1
SAGINAW	Y	DBN	Est.	ESTABLISHED	1
SAGINAW	Y	DBN	Est/Disc B	ESTABLISHED	73
SAGINAW	Y	DBN	Established	ESTABLISHED	2
SAGINAW	Y	DBN	Rebuild	REBUILT	1
SAGINAW	Y	DBN	Rebuilt	REBUILT	36
SAGINAW	Y	DBN	Rebuilt/no wreck located	REBUILT	1
SAGINAW	Y	DBN	Est/Buoy Rec. Wkg.	REBUILT/REMOVE	1
SAGINAW	Y	DBN	Re-established	REBUILT/REMOVE	1
SAGINAW	Y	DBN	Rebuilt	REBUILT/REMOVE	28
SAGINAW	Y	DBN	Relocated	REBUILT/REMOVE	3
SAGINAW	Y	DBN	by ANT.	REBUILT/REMOVE	1
SAGINAW	Y	DBN	rebuilt	REBUILT/REMOVE	1
SAGINAW	Y	DBN	Raised Four/height	REPAIRED	1
SAGINAW	Y	DBN	Rebuilt Straightened	REPAIRED	1
SAGINAW	Y	DBN	Replaced Boards	REPAIRED	1
SAGINAW	Y	DBN	Replaced DBD	REPAIRED	1
SAGINAW	Y	DBN	Replaced Missing DBN's	REPAIRED	1
SAGINAW	Y	DBN	Replaced missing Day Board	REPAIRED	1
SAGINAW	Y	DBN	Replaced missing Dayboard	REPAIRED	1
SAGINAW	Y	DBN	Replaced pile	REPAIRED	3
SAGINAW	Y	DBN	Straightened	REPAIRED	2
SAGINAW	Y	DBN	Straightened	REPAIRED	2
SAGINAW	Y	DBN	Relocated	RESET	1
SAGINAW	Y	LT		DISCONTINUED	1
SAGINAW	Y	LT		ESTABLISHED	49
SAGINAW	Y	LT	Disc. DBN Established Lt	ESTABLISHED	1
SAGINAW	Y	LT	Est.	ESTABLISHED	1
SAGINAW	Y	LT	Establish	ESTABLISHED	1
SAGINAW	Y	LT	Established	ESTABLISHED	3
SAGINAW	Y	LT	Established 10yds channel ward of work	ESTABLISHED	1
SAGINAW	Y	LT	Establishment	ESTABLISHED	1
SAGINAW	Y	LT	Rebuild	REBUILT	1
SAGINAW	Y	LT	Rebuilt	REBUILT	112
SAGINAW	Y	LT	Rebuilt White Pine Recovered Wkg.	REBUILT	1
SAGINAW	Y	LT		REBUILT/REMOVE	5
SAGINAW	Y	LT	Rebuilt	REBUILT/REMOVE	73
SAGINAW	Y	LT	Relocated	REBUILT/REMOVE	1
SAGINAW	Y	LT	Replaced	REBUILT/REMOVE	2
SAGINAW	Y	LT	Wreckage on beach Dog River	REBUILT/REMOVE	1
SAGINAW	Y	LT	by ANT	REBUILT/REMOVE	1
SAGINAW	Y	LT	rebuilt	REBUILT/REMOVE	1
SAGINAW	Y	LT	Added New Range Boards	REPAIRED	1
SAGINAW	Y	LT	Added bottem piles	REPAIRED	1
SAGINAW	Y	LT	Brackets Replaced header	REPAIRED	1
SAGINAW	Y	LT	Instal Day	REPAIRED	1
SAGINAW	Y	LT	Installed Batton Piles and Y Brac	REPAIRED	1
SAGINAW	Y	LT	Installed bottom piles	REPAIRED	1
SAGINAW	Y	LT	Leveled Header	REPAIRED	1
SAGINAW	Y	LT	Minor repair	REPAIRED	1
SAGINAW	Y	LT	Rebolted piles replaced header	REPAIRED	1
SAGINAW	Y	LT	Rebuilt Dic TRLB	REPAIRED	1
SAGINAW	Y	LT	Rebuilt Header	REPAIRED	1
SAGINAW	Y	LT	Reolted Piles replaced header	REPAIRED	1
SAGINAW	Y	LT	Repair	REPAIRED	1
SAGINAW	Y	LT	Repaired	REPAIRED	6
SAGINAW	Y	LT	Repaired Battery Box	REPAIRED	1
SAGINAW	Y	LT	Repaired Header	REPAIRED	1
SAGINAW	Y	LT	Repaired Tow Support	REPAIRED	1

Actions and Derived Actions for
HUDSON, MALLET and SAGINAW Logs

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WLIC	WLIC Needed?	Aid Type	Indicated Action	Derived Action	Count
SAGINAW	Y	LT	Repaired header	REPAIRED	1
SAGINAW	Y	LT	Replaced 2 bottom piles	REPAIRED	1
SAGINAW	Y	LT	Replaced DBD's	REPAIRED	2
SAGINAW	Y	LT	Replaced DBDS	REPAIRED	1
SAGINAW	Y	LT	Replaced Day Board	REPAIRED	1
SAGINAW	Y	LT	Replaced Dayboard	REPAIRED	1
SAGINAW	Y	LT	Replaced Header	REPAIRED	2
SAGINAW	Y	LT	Replaced Tower	REPAIRED	1
SAGINAW	Y	LT	Replaced Tower Rebolted Braces	REPAIRED	1
SAGINAW	Y	LT	Replaced header	REPAIRED	6
SAGINAW	Y	LT	Replaced header Bracket	REPAIRED	1
SAGINAW	Y	LT	Replaced x-bracing & bottom bracing	REPAIRED	1
SAGINAW	Y	LT	Straighted	REPAIRED	1
SAGINAW	Y	LT	Tightened heading	REPAIRED	1
SAGINAW	Y	LT	Relocated	RESET	1
SAGINAW	Y	Total			465
SAGINAW		Total			653

Table: ACTIONS Report: 1

APPENDIX G

**COAST GUARD CONTRACT LINE ITEM
SPREADSHEET DATA FOR
THE COLUMBIA RIVER SYSTEM (D13)
AND SAN FRANCISCO BAY (D11)**

COAST GUARD CONSTRUCTION CONTRACT BY ACTIVITY
Price and Quantity Totals

APPENDIX G

Price and Quantity Totals										
#	General Category of Work	Type of work	\$ Per Unit	Activity	Per Unit Cost		Quantities		Total Cost Per Activity	
					Columbia River System	SF/SP/8 Bays	Columbia River System	SF/SP/8 Bays	Columbia River System	SF/SP/8 Bays
Item No. 1: Mobilization-Demobilization										
1a		Emergency Orders	\$ Per Delivery Order	Mobilize for removal of structure in AREA No 1.	\$3,000	\$1,150		1	\$3,000	\$1,150
1b		-	-	Demobilize for removal of structure in AREA No 1.	\$3,000	\$1,150		1	\$3,000	\$1,150
1c		-	-	Mobilize for removal of structure in AREA No 2.	\$2,500	\$1,150		1	\$2,500	\$1,150
1d		-	-	Demobilize for removal of structure in AREA No 2.	\$2,500	\$1,150		1	\$2,500	\$1,150
1e		-	-	Mobilize for removal of structure in AREA No 3.		\$2,400		1	\$0	\$2,400
1f		-	-	Demobilize for removal of structure in AREA No 3.		\$2,400		1	\$0	\$2,400
1g	Improper Characteristic Delivery Orders	-	-	Mobilize for Improper Characteristic Delivery Order in AREA No 1.	\$3,000	\$1,800		1	\$3,000	\$1,800
1h		-	-	Demobilize for Improper Characteristic Delivery Order in AREA No 1.	\$3,000	\$1,800		1	\$3,000	\$1,800
1i		-	-	Mobilize for Improper Characteristic Delivery Order in AREA No 2.	\$2,500	\$1,800		1	\$2,500	\$1,800
1j		-	-	Demobilize for Improper Characteristic Delivery Order in AREA No 2.	\$2,500	\$1,800		1	\$2,500	\$1,800
1k		-	-	Mobilize for Improper Characteristic Delivery Order in AREA No 3.		\$2,800		1	\$0	\$2,800
1l		-	-	Demobilize for Improper Characteristic Delivery Order in AREA No 3.		\$2,800		1	\$0	\$2,800
Item No 2: Transit Costs										
2a			\$ Per Nautical Mile	Transit from One Work Location to Another work location on same Delivery Order.	\$60	\$150		50	\$3,000	\$9,000
3a	Item No. 3: Removals	Emergency Orders	\$ Per Structure	Remove damaged single (1) pipe pile structure, including daymark, under Emergency Delivery Order.	\$2,200			1	\$2,200	\$0
3b		-	-	Remove damaged single (1) pile structure, including platform assembly & ATON equipment, under Emergency Delivery Order.		\$2,250		1	\$0	\$2,250
3c		-	-	Remove damaged multi-pile structure, including platform assembly & ATON equipment, under Emergency Delivery Order.		\$2,550		1	\$0	\$2,550
3d		-	-	Remove damaged three (3) pipe pile structure, including daymark, under Emergency Delivery Order.	\$3,000			1	\$3,000	\$0
3e		-	-	Remove damaged three (3) pile wood daybeacon structure, including daymark, under Emergency Delivery Order.	\$3,000			1	\$3,000	\$0
3f		-	-	Remove damaged four (4) pile wood structure, including platform assembly and ATON equipment, under Emergency Delivery Order.	\$3,500			1	\$3,500	\$0
3g		-	-	Remove damaged four (4) pile steel structure, including platform assembly and ATON equipment, under Emergency Delivery Order.	\$3,000			1	\$3,000	\$0

G-1, 2/16/84

COAST GUARD CONSTRUCTION CONTRACT BY ACTIVITY
Price and Quantity Totals

APPENDIX G

#	General Category of Work	Type of work	\$ Per Unit	Activity	Per Unit Cost		Quantities		Total Cost Per Activity	
					Columbia River System	SF/SP/S Bays	Columbia River System /S Bays	SF/SP/S Bays	Columbia River System	SF/SP/S Bays
3h		-	-	Remove damaged five (5) pile wood structure, including platform assembly and ATON equipment, under Emergency Delivery Order.	\$2,200		1		\$2,200	\$0
3i		-	-	Remove damaged nine (9) pile wood range structure, including platform assembly and ATON equipment, under Emergency Delivery Order.	\$4,800		1		\$4,800	\$0
3j		-	-	Remove damaged nine (9) pile wood dophlin structure under Emergency Delivery Order.	\$4,800		1		\$4,800	\$0
3k		-	-	Remove damaged thirteen (13) pile wood dophlin structure under Emergency Delivery Order.	\$5,200		1		\$5,200	\$0
3l		-	-	Remove 30 foot or less sectional steel tower from base structure under Emergency Delivery Order.	\$2,500		1		\$2,500	\$0
3m			\$ Per Structure	Remove damaged single (1) pile pipe structure, including daymark, under IC Delivery Order.	\$2,200		1		\$2,200	\$0
3n	Improper Characteristic Delivery Order		-	Remove damaged single (1) pile structure, including platform assembly & ATON equipment, under IC Delivery Order.		\$2,250		1	\$0	\$2,250
3o			-	Remove damaged multi-pile structure, including platform assembly & ATON equipment, under IC Delivery Order.		\$2,710		1	\$0	\$2,710
3p		-	-	Remove damaged three (3) pile pipe structure, including daymark, under IC Delivery Order.	\$3,000		1		\$3,000	\$0
3q		-	-	Remove damaged three (3) pile wood daybeacon structure, including daymark, under IC Delivery Order.	\$3,000		1		\$3,000	\$0
3r		-	-	Remove damaged four (4) pile wood structure, including platform assembly and ATON equipment, under IC Delivery Order.	\$3,500		1		\$3,500	\$0
3s		-	-	Remove damaged four (4) pile steel structure, including platform assembly and ATON equipment, under IC Delivery Order.	\$3,000		1		\$3,000	\$0
3t		-	-	Remove damaged five (5) pile wood structure, including platform assembly and ATON equipment, under IC Delivery Order.	\$2,200		1		\$2,200	\$0
3u		-	\$ per Pile Removed	Remove broken pile from multi-pile wood structures under IC Delivery Order.	\$500		1		\$500	\$0
3v		-	\$ Per Structure	Remove damaged nine (9) pile wood dophlin structure under IC Delivery Order.	\$4,800		1		\$4,800	\$0
3x		-	-	Remove damaged thirteen (13) pile wood dophlin structure under IC Delivery Order.	\$5,200		1		\$5,200	\$0
3y		-	-	Remove 30 foot or less sectional steel tower from base structure under IC Delivery Order.	\$2,500		1		\$2,500	\$0
4a	Item No. 4: Materials	Wood Structures	\$ Per Pile	Treated Timber Piles for 60' long timber piles.	\$800		5		\$4,000	\$0

G-2, 2/16/94

COAST GUARD CONSTRUCTION CONTRACT BY ACTIVITY									
Price and Quantity Totals									
APPENDIX G									
S	General Category of Work	Type of work	\$ Per Unit	Activity	Per Unit Cost		Quantities		Total Cost Per Activity
					Columbia River System	SF/SP/6 Bays	Columbia River System / 6 Bays	SF/ SP	
4b		-	-	Treated Timber Piles for 80' long timber piles.	\$1,200			5	\$6,000 \$0 \$0
4c		-	-	Treated Timber Piles for 90' long timber piles.	\$1,500			5	\$7,500 \$0 \$0
4d			\$ Per Platform	Platform Materials for five (5) pile wood structure.	\$1,200			1	\$1,200 \$0 \$0
4e			-	Platform Materials for four (4) pile wood structure.	\$1,365			1	\$1,365 \$0 \$0
4f			\$ per pile wrapped structure	Pile Wrap Materials (wire, rope, clamps etc.) for five (5) pile wood structure.	\$500			1	\$500 \$0 \$0
4g			\$ per brace	3" X 12" ladder braces for four (4) pile wood structures.	\$100			2	\$200 \$0 \$0
4h			\$ per 5' 7" ladder section	Fabricated ladder sections.	100			5	\$500 \$0 \$0
4i			\$ per linear foot	Rub boards for four (4) pile structure.	\$5			40	\$200 \$0 \$0
4j			\$ per daymark mount	Daymark mounting materials for four (4) pile wood structure. Costs for non-range daymark mounting materials included in platform costs.	\$50			1	\$50 \$0 \$0
4k			\$ per daybeacon structure	Spike grids, bolts, nuts & other hardware for three (3) pile wood daybeacon structure.	\$150			1	\$150 \$0 \$0
4l			\$ per pile wrapped structure	Pile wrap material (wire, rope, clamps etc.) for nine (9) pile wood structure.	\$700			1	\$700 \$0 \$0
4m				Pile wrap material (wire, rope, clamps etc.) for thirteen (13) pile wood structure.	\$850			1	\$850 \$0 \$0
4n	Steel Pipe Pile Structures		(\$ per LF)	40' long steel pipe	\$22			400	\$8,800 \$0 \$0
4o			(\$ per weld)	Prepare and weld pipe sections into pile.	\$250			2	\$500 \$0 \$0
4p			\$ per pile length	Prepare and Weld pipe sections into pile upto 80LF.		\$1,000		10	\$10,000
4q			\$ per pile length	Prepare and Weld pipe sections into pile over 80LF.		\$1,250		10	\$12,500
4r	Steel Structures		\$ per LF	30' long steel H-pile	\$22			120	\$2,640 \$0 \$0
4s			-	40' long steel H-pile	\$22			180	\$3,960 \$0 \$0
4t			-	50' long steel H-pile	\$22			200	\$4,400 \$0 \$0
4u			-	W 6 x 31	\$13			264	\$3,432 \$0 \$0
4v			(\$ per weld)	Prepare and Weld H-Pile sections into pile	\$250			4	\$1,000 \$0 \$0
4x		XXXXXXXXXX	\$ per cut	Cut off pipe section, not to exceed ten feet, to obtain desired height of pile (above MHW).		\$1,280		1	\$1,280 \$0 \$0

COAST GUARD CONSTRUCTION CONTRACT BY ACTIVITY
Price and Quantity Totals

APPENDIX G

#	General Category of Work	Type of work	\$ Per Unit	Activity	Per Unit Cost		Quantities		Total Cost Per Activity	
					Columbia River System	SF/SP/8 Bays	Columbia River System	SF/SP/8 Bays	Columbia River System	SF/SP/8 Bays
4v		XXXXXXXXXX	\$ per addition	Add pipe section, not to exceed ten feet, to obtain desired height of pile (above MHW).		\$1,280		1	\$0	\$1,280 \$0
4z		XXXXXXXXXX	\$ per platform	Fabricate collision tolerant Pile Structure platform assembly as per		\$2,050		2	\$0	\$4,100 \$0
4aa	Steel Structures		\$ Per Platform	Fabricated platform materials, including lantern stand, for a single multi-pile structure.	\$1,500			3	\$4,500	\$0 \$0
4bb	-		\$ per 7" ladder section	Fabricated ladder section	\$120			3	\$360	\$0 \$0
4cc	-		\$ per ladder bracket	Fabricated single pile ladder bracket.	\$150			3	\$450	\$0 \$0
4dd	-		\$ per dayboard bracket	Fabricated single pile range dayboard bracket.	\$150			3	\$450	\$0 \$0
4ee	-		\$ per ladder bracket	Fabricated multi-pile ladder bracket.	\$150			3	\$450	\$0 \$0
4ff	-		\$ per dayboard bracket	Fabricated multi-pile range dayboard bracket.	\$150			3	\$450	\$0 \$0
4gg	-		\$ per 10 ft. structure	Fabricated 10 foot galvanized standard square sectional steel tower, including platform structure.	\$4,044			1	\$4,044	\$0 \$0
4hh	-		\$ per 15 ft. structure	Fabricated 15 foot galvanized standard square sectional steel tower, including platform structure.	\$4,466			1	\$4,466	\$0 \$0
4ii	-		\$ per 20 ft. structure	Fabricated 20 foot galvanized standard square sectional steel tower, including platform structure.	\$6,186			1	\$6,186	\$0 \$0
4jj	-		\$ per 25 ft. structure	Fabricated 25 foot galvanized standard square sectional steel tower, including platform structure.	\$6,909			1	\$6,909	\$0 \$0
4kk	-		\$ per 30 ft. structure	Fabricated 30 foot galvanized standard square sectional steel tower, including platform structure.	\$7,716			1	\$7,716	\$0 \$0
5a	Item No. 5: Installation	Three (3) Pile Wood Daybeacon	\$ per structure	Install 3 pile daybeacon structure including daymark.	\$2,500			1	\$2,500	\$0 \$0
5b		Four (4) Pile Wood Structure	\$ per structure	Install 4 pile range structure, including platform assembly, ladder stanchion, cross-bracing and daymark.	\$9,460			1	\$9,460	\$0 \$0
5c	-		\$ per 5' 7" ladder section	Install ladder on 4 pile structures.	\$100			3	\$300	\$0 \$0
5d	-		\$ per LF of rub boards	Install rub boards on 4 pile structures.	\$10			40	\$400	\$0 \$0
5e		Five (5) Pile Wood Structure	\$ per structure	Install 5 pile wood structure, including platform assembly, ladder stanchion and daymarks.	\$4,500			1	\$4,500	\$0 \$0
5f			\$ per 5' 7" ladder section	Install ladder on 5 pile structures.	\$100			5	\$500	\$0 \$0
5g		Nine (9) Pile Wood Structures	\$ Per Structure wraps	Install 9 pile dolphin structure, including pile wraps.	\$7,500			1	\$7,500	\$0 \$0

G-4, 2/16/94

COAST GUARD CONSTRUCTION CONTRACT BY ACTIVITY									
Price and Quantity Totals									
APPENDIX G									
#	General Category of Work	Type of work	\$ Per Unit	Activity	Per Unit Cost		Quantities		Total Cost Per Activity
					Columbia River System	SF/SP/S Bays	Columbia River System	SF/SP/S Bays	
5h		Single Pile Range Structure	-	Install single-pile range structure including platform assembly.		\$4,250		1	\$0
5i		Multi-Pile Range Structure	-	Install multi-pile range structure including platform assembly.		\$5,750		1	\$0
5j		Four (4) Pile Wood Structure	-	Install 4 pile NON-range structure, including platform assembly, ladder stanchion, cross-bracing and daymark.					\$0
5k		Single Pile Lateral Structure	-	Install single pile lateral structure including platform assembly.	\$9,480		1		\$9,480
5l		Multi-Pile Lateral Structure	-	Install multi-pile lateral structure including platform assembly.		\$3,225		1	\$0
5m		Single-pile steel structure	\$ per structure	Install single-pile steel day beacon structure, and daymarks.	\$2,700		1		\$2,700
5n		-	-	Install Single-pile steel structure, including platform assembly, ladder stanchions, & daymarks.	\$3,000		1		\$3,000
5o		-	\$ per 7' ladder section	Install ladder on single-pile steel daybeacon structures.	\$100		3		\$300
5p		Multi-Pile Steel Structures	\$ per structure	Install multi-pile steel structure, including platform assembly, ladder stanchions, and daymarks.	\$4,200		1		\$4,200
5q		-	\$ per 7' ladder	Install ladder on multi-pile steel daybeacon structures.	\$100		4		\$400
5r		-	\$ per structure	Install four (4) pile steel range structure, including sectional steel tower, platform, ladder, and daymarks.	\$12,000		1		\$12,000
5s		Thirteen (13) Pile Wood Structures	\$ per structure	Install 13 pile dolphin structure, including pile wrap's	\$7,200		1		\$7,200
6a	Item No. 6: Repairs	Wood Structures	(\$ per pile)	Replace a broken pile in a multi-pile wood structure.	\$3,000		1		\$3,000
6b		-	(\$ per platform)	Replace a platform assembly on a multi-pile wood structure.	\$3,200		1		\$3,200
6c		-	(\$ per ladder section)	Replace a 5' 7" ladder section on a multi-pile wood structure.	\$100		1		\$100
6d		-	\$ per hardware set	Replace the spike grid & through bolt hardware on a 3 pile wood daybeacon structure.	\$750		1		\$750
6e		-	\$ per pile wrap structure	Replace the pile wrap on a 5 pile wood dolphin structure.	\$750		1		\$750
6f		-	\$ per brace or rub board	Replace ladder braces or rub boards on a 4 pile wood structure.	\$500		1		\$500
6g		-	\$ per pile wrap structure	Replace the pile wrap on a 9 pile wood dolphin structure.	\$2,200		1		\$2,200
6h		-	-	Replace the pile wrap on a 13 pile wood dolphin structure.	\$2,700		1		\$2,700
6i		Multi-Pile ATON Structure	\$ per repair	Repair multi-pile ATON structure. Install new through bolts, weld new pipe extension in place.		\$2,400		1	\$0
6j		Platform Replacement	\$ per platform	Replace existing damaged platform.		\$750		1	\$0

COAST GUARD CONSTRUCTION CONTRACT BY ACTIVITY										APPENDIX G	
Price and Quantity Totals										Total Cost Per Activity	
#	General Category of Work	Type of work	\$ Per Unit	Activity	Columbia River System	SF/SP/S Buys	Columbia River System /S Buys	Quantities SF/SP	Columbia River System /S Buys	Columbia River System	SF/SP/S Buys
6k		Ladder replacement	\$ per ladder extension	Replace existing damaged seven foot ladder extension and support brackets with new seven foot ladder extension and support brackets.		\$750		1		\$0	\$750 \$0
6l		Steel Structures	\$ per ladder section	Replace the ladder section on a single pipe pile structure	\$100			1		\$100	\$0 \$0
6m		-	-	Replace the ladder section on a multi-pipe pile structure	\$100			1		\$100	\$0 \$0
7a	Item No. 7: Diving Services		\$ per structure	Diving services to cut one wood structure, regardless of number of piles at the mud-line, under either emergency or 1 improper Characteristics Delivery Order.	\$3,200	\$1,000		1	4	\$3,200	\$4,000 \$0
8a	Item No. 8: Field Engineering		\$ per structure	Perform geodetic surveying	\$2,500	\$3,500		1	14	\$2,500	\$49,000 \$0
9a	Item No. 9: Buoy	Temporary Buoys	\$ per buoy	Retrieve and return temporary buoy to assigned ANT	\$1,700			1		\$1,700	\$0 \$0
9b		Salvaged Buoys	\$ per set	Remove and deliver ATON sets consisting of : buoy, chain, & sinker to Base		\$300			8	\$0	\$2,400 \$0
10a	Item No. 10: Deliver remaining Materials to CG Base [Specify] at end of contract.		\$ per one delivery	Deliver remaining Materials to CG Base [Specify] at end of contract.	\$1			1		\$1	\$0 \$0
10b			\$ per return	Return pipe (1), platform (2), & ladder extensions (3) remaining at end of contract.		\$100			3	\$0	\$300 \$0
10c			\$ per driving pile	Return CTPS Driving Pile at end of Contract		\$100			1	\$0	\$100 \$0
10d			\$ per battery	Containerize and transfer batteries incidentally recovered.		\$40			2	\$0	\$80 \$0
11a	Item No. 11: Pick up materials.		\$ per one pickup	Remaining from last year's contract at CG Base [Specify]	\$1			1		\$1	\$0 \$0
11b			\$ per 400 LF Increments	Pick up 800 LF of Gov't furnished pipe.		\$1,300			1	\$0	\$1,300 \$0
11c			\$ per one pickup	Pick up additional Gov't furnished pipe > 800LF.		\$1,000			1	\$0	\$1,000 \$0
11d			\$ per 5 platform increments.	Pick up ten (10) platform assemblies.		\$400			1	\$0	\$400 \$0
11e			\$ per one pickup	Pick up additional platform at 5 platforms per trip min.		\$400			1	\$0	\$400 \$0
11f			\$ per one pickup	Pick up 5 ladder extensions with 8 single pile ladder brackets & 2 multi-pile ladder brackets.		\$100			1	\$0	\$100 \$0
11g			\$ per additional ladder extensions.	Pick up additional ladder extensions.		\$100			1	\$0	\$100 \$0
11h	Collision Tolerant Pile Structure (CTPS)		\$ per CTPS	Pick up CTPS & Drilling Pile.	\$250				2	\$0	\$500 \$0
										\$257,810	\$149,875 \$0

APPENDIX H

BREAKDOWN OF CONSTRUCTION ACTIVITY FOR MALLET, HUDSON, AND SAGINAW

APPENDIX H

BREAKDOWN OF CONSTRUCTION ACTIVITY												
THE MALLET	Single Pile Wd DBN	Three Pile Wood DBN	Wood DBN	Passing Light Only, DBN	Single Pile Wood LT	Three Pile Wood LT	Passing Light Only, LT	4 Pile Wood Platform, LT	8 Pile Wood Platform, LT	Mud Sill, LT	None, LT	Total
Rebuilt /Replaced	16			8	1	35	12	3	1	1	2	79
Repaired	1	4			1	5		1	1			13
Reset								1				1
Discontinued							1					1
Established												3
Geodetic Survey												
Diving Services												
Buoys (Temporary)												
Buoys (Salvaged)												
Delivery of Materials to CG Base												
Pick Up of Materials to CG Base												
Total	17	4	8	2	40	13	4	4	2	1	2	97

APPENDIX H

BREAKDOWN OF CONSTRUCTION ACTIVITY												
THE HUDSON	Single Pile Wd DBN	Three Pile Wood DBN	Wood DBN	Passing Light Only, DBN	Single Pile Wood LT	Single Pile Steel LT	Passing Light Only, LT	Multi Pile Steel Platform	8 Pile Wood Platform, LT	Mud Sill, LT	One Pile Steel, LT	Total
Rebuilt Only												0
Rebuilt & Removals	145				44	2		9				200
Repaired	9				46	1		8				64
Reset												0
Discontinued	11				7	1						19
Established	44				18	1		3				66
Geodetic Survey												0
Diving Services												0
Buoys (Temporary)												0
Buoys (Salvaged)												0
Delivery of Materials to CG Base												0
Pick Up of Materials to CG Base												0
Total	209	0	0	0	115	5	0	20	0	0	0	349

APPENDIX H

BREAKDOWN OF CONSTRUCTION ACTIVITY												
	Single Pile Wd DBN	Three Pile Wood DBN	Wood DBN	Passing Light Only, DBN	Single Pile Wood LT	Three Pile Wood LT	Passing Light Only, LT	4 Pile Wood Platform, LT	8 Pile Wood Platform, LT	Mud Sill, LT	One Pile Steel, LT	Total
THE SAGINAW												
Rebuilt Only	38				71	26		13	2		1	151
Rebuilt & Removals	35				53	20		10	2			120
Repaired	14				27	10		5	1			57
Reset	1				1							2
Discontinued	1				1							2
Established	77				36	13		7	1			134
Geodetic Survey												0
Diving Services												0
Buoys (Temporary)												0
Buoys (Salvaged)												0
Delivery of Materials to CG Base												0
Pick Up of Materials to CG Base												0
Total	166	0	0	0	189	69	0	35	6	0	1	466

APPENDIX I

PROJECTED THROUGH-CONTRACT COSTS FOR MALLET, HUDSON, AND SAGINAW

**PROJECTED THROUGH-CONTRACT COSTS
HUDSON: Actual 23 Months Log File**

APPENDIX I

Unit Costs: 1. Columbia River System		\$6,904,244	\$3,287,459	\$2,393,899	\$2,274,459	\$2,108,454
ALL WORK ORDERS						
JOB COSTS NOT SPECIFIC TO						
WORK ORDER Scenario 1 Scenario 2 Scenario 3 Scenario 4 Scenario 5						
Visits Per Trip	1	3	6.80	7	9	
Total Number of Trips	349	116	60	50	39	
Mob/Demo Costs Per Trip	\$5,500	\$5,500	\$5,500	\$5,500	\$5,500	
Total Mob/Demo Costs	\$1,919,500	\$639,833	\$330,948	\$274,214	\$213,278	
Transit Costs Per Mile	\$60	\$60	\$60	\$60	\$60	
Avg Miles Per Trip	177	197	219	243	267	
Total Transit Costs	\$3,711,894	\$1,374,776	\$790,101	\$727,395	\$622,326	
Geodetic Survey & Positionings	\$0	\$0	\$0	\$0	\$0	
Diving Services	\$0	\$0	\$0	\$0	\$0	
Buoys (Temporary)	\$0	\$0	\$0	\$0	\$0	
Buoys (Salvaged)	\$0	\$0	\$0	\$0	\$0	
Delivery of Materials to CG Base	\$0	\$0	\$0	\$0	\$0	
Pick Up of Materials to CG Base	\$0	\$0	\$0	\$0	\$0	

From DSS	
1-Year Log	
5.8 aids/trip	
6,550.18 knots * transit time	
7,537.95 transit miles	
31.00 trips	
243.16 miles per trip	

JOB COSTS SPECIFIC TO WORK											
ORDER DBN Single Pile Wd Three Pile Passing Multi Pile 8 Pile											
Costs by Job Order: 3. Removals	\$2,200	\$3,000	\$2,200	\$2,200	\$2,200	\$2,200	\$2,200	\$2,200	\$2,200	\$2,200	\$2,200
4. Materials											
5a.e.g. Installation	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500
5n.p. Installation	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000
6. Repairs	\$750	\$750	\$750	\$750	\$750	\$750	\$750	\$750	\$750	\$750	\$750
Work Order: Rebuilt Only	0	0	0	0	0	0	0	0	0	0	0
Job Order(s): 5. Installation	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Cost	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Work Order: Rebuilt & Removal	145	0	0	0	0	0	0	0	0	0	0
Job Order (s): 3. Removal	\$319,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5. Installation	\$362,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Cost	\$681,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Work Order: Repaired	9	0	0	0	0	0	0	0	0	0	0
Job Order (s): 6. Repairs	\$6,750	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Cost	\$6,750	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Work Order: Reset	0	0	0	0	0	0	0	0	0	0	0
Job Order (s): 6. Repairs	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Cost	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Work Order: Discontinued	11	0	0	0	0	0	0	0	0	0	0
Job Order (s): 3. Removals	\$24,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Cost	\$24,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Work Order: Established	44	0	0	0	0	0	0	0	0	0	0
Job Order (s): 5. Installation	\$132,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Cost	\$132,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

PROJECTED THROUGH-CONTRACT COSTS
HUDSON: Actual 23 Months Log File

APPENDIX I

Unit Costs: 2. SF/SP/S Bays		\$12,278,661	\$5,487,747	\$3,797,205	\$3,598,404	\$3,290,586
ALL WORK ORDERS						
JOB COSTS NOT SPECIFIC TO WORK ORDER						
Visits Per Trip	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	
Total Number of Trips	349	116	60	50	39	
Mob/Demo Costs Per Trip	\$4,075	\$4,075	\$4,075	\$4,075	\$4,075	
Total Mob/Demo Costs	\$1,422,175	\$474,058	\$245,203	\$203,168	\$158,019	
Transit Costs Per Mile	\$150	\$150	\$150	\$150	\$150	
Avg Miles Per Trip	177	197	219	243	267	
Total Transit Costs	\$9,279,736	\$3,436,939	\$1,975,252	\$1,818,486	\$1,555,816	
Geodetic Survey & Positionings	\$0	\$0	\$0	\$0	\$0	
Diving Services	\$0	\$0	\$0	\$0	\$0	
Buoys (Temporary)	\$0	\$0	\$0	\$0	\$0	
Buoys (Salvaged)	\$0	\$0	\$0	\$0	\$0	
Delivery of Materials to CG Base	\$0	\$0	\$0	\$0	\$0	
Pick Up of Materials to CG Base	\$0	\$0	\$0	\$0	\$0	
JOB COSTS SPECIFIC TO WORK ORDER						
Costs by Job Order: 3. Removals 4. Materials	Single Pile Wd	Three Pile	Passing Light		8 Pile	
	ORDER DBN	Wood DBN	Only, DBN	Wood LT	Steel LT	Total
Work Order: Rebuilt Only	0	0	0	0	0	0
Job Order(s): 5. Installation	\$0	\$0	\$0	\$0	\$0	\$0
Total Cost	\$0	\$0	\$0	\$0	\$0	\$0
Work Order: Rebuilt & Removal	145	0	0	0	0	200
	\$326,250	\$0	\$0	\$0	\$0	\$452,700
Job Order (s): 3. Removal	\$467,625	\$0	\$0	\$0	\$0	\$699,325
5. Installation	\$793,875	\$0	\$0	\$0	\$0	\$1,152,025
Total Cost	\$793,875	\$0	\$0	\$0	\$0	\$1,152,025
Work Order: Repaired	9	0	0	0	0	64
	\$6,750	\$0	\$0	\$0	\$0	\$62,850
Job Order (s): 6. Repairs	\$6,750	\$0	\$0	\$0	\$0	\$62,850
Total Cost	\$6,750	\$0	\$0	\$0	\$0	\$62,850
Work Order: Reset	0	0	0	0	0	0
	\$0	\$0	\$0	\$0	\$0	\$0
Job Order (s): 6. Repairs	\$0	\$0	\$0	\$0	\$0	\$0
Total Cost	\$0	\$0	\$0	\$0	\$0	\$0
Work Order: Discontinued	11	0	0	0	0	19
	\$24,750	\$0	\$0	\$0	\$0	\$42,750
Job Order (s): 3. Removals	\$24,750	\$0	\$0	\$0	\$0	\$42,750
Total Cost	\$24,750	\$0	\$0	\$0	\$0	\$42,750
Work Order: Established	44	0	0	0	0	101
	\$141,900	\$0	\$0	\$0	\$0	\$319,125
Job Order (s): 5. Installation	\$141,900	\$0	\$0	\$0	\$0	\$319,125
Total Cost	\$141,900	\$0	\$0	\$0	\$0	\$319,125

I-H2, 3/21/94

PROJECTED THROUGH-CONTRACT COSTS
MALLET: Actual 15 Months Log File

JOB COSTS SPECIFIC TO WORK ORDER										
	Single Pile Wood DBN	Three Pile Wood DBN	Passing Light Only, DBN	Single Pile Wood LT	Three Pile Wood LT	Passing Light Only, LT	Wood Platform, LT	Wood Platform, LT	Mud Sill, LT	None LT
Costs by Job Order:										
3. Removals	\$2,200	\$3,000	\$3,000	\$2,200	\$3,000		\$3,500	\$4,800	\$3,500	\$3,500
4. Materials										
5. Installation	\$2,500	\$2,500	\$2,500	\$2,500	\$4,500		\$4,500	\$7,500	\$4,500	\$4,500
6. Repairs	\$750	\$750	\$750	\$750	\$3,200	\$750	\$3,200	\$3,200		

Work Order: Rebuilt /Replaced	15	0	10	1	32	11	0	3	1	1	0	74
Job Order (s): 3. Removal	\$33,000	\$0	\$30,000	\$3,000	\$70,400	\$33,000	\$0	\$10,500	\$4,800	\$3,500	\$0	\$188,200
5. Installation	\$37,500	\$0	\$25,000	\$2,500	\$80,000	\$49,500	\$0	\$13,500	\$7,500	\$4,500	\$0	\$220,000
Total Cost	\$70,500	\$0	\$55,000	\$5,500	\$150,400	\$82,500	\$0	\$24,000	\$12,300	\$8,000	\$0	\$408,200
Work Order: Repaired	2	0	0	0	7	5	0	0	1	0	0	15
Job Order (s): 6. Repairs	\$1,500	\$0	\$0	\$0	\$5,250	\$16,000	\$0	\$0	\$3,200	\$0	\$0	\$25,950
Total Cost	\$1,500	\$0	\$0	\$0	\$5,250	\$16,000	\$0	\$0	\$3,200	\$0	\$0	\$25,950
Work Order: Reset	0	0	0	0	0	0	1	0	0	0	0	1
Job Order (s): 6. Repairs	\$0	\$0	\$0	\$0	\$0	\$0	\$750	\$0	\$0	\$0	\$0	\$750
Total Cost	\$0	\$0	\$0	\$0	\$0	\$0	\$750	\$0	\$0	\$0	\$0	\$750
Work Order: Discontinued	0	0	0	0	0	3	0	0	0	0	0	3
Job Order (s): 3. Removals	\$0	\$0	\$0	\$0	\$0	\$9,000	\$0	\$0	\$0	\$0	\$0	\$9,000
Total Cost	\$0	\$0	\$0	\$0	\$0	\$9,000	\$0	\$0	\$0	\$0	\$0	\$9,000
Work Order: Established	0	0	0	0	1	0	3	0	0	0	0	4
Job Order (s): 6. Repairs	\$0	\$0	\$0	\$0	\$750	\$0	\$2,250	\$0	\$0	\$0	\$0	\$3,000
Total Cost	\$0	\$0	\$0	\$0	\$750	\$0	\$2,250	\$0	\$0	\$0	\$0	\$3,000

PROJECTED THROUGH-CONTRACT COSTS
MALLET: Actual 15 Months Log File

JOB COSTS SPECIFIC TO WORK ORDER													
	Single Pile	Three Pile	Wood DBN	Wood DBN	Wood DBN	Passing Light Only, DBN	Single Pile Wood LT	Three Pile Wood LT	Passing Light Only, LT	Wood Platform, LT	Wood Platform, LT	Mud Sill, LT	None LT
Costs by Job Order: 3. Removals													
4. Materials													
5. Installation	\$3,225	\$1,250	\$4,250	\$4,250	\$4,250	\$4,250	\$4,250	\$5,750	\$5,750	\$5,750	\$5,750	\$5,750	\$5,750
6. Repairs	\$750	\$750	\$750	\$750	\$750	\$750	\$750	\$2,400	\$750	\$2,400	\$2,400		

1-M2, 3/21/94

APPENDIX I

PROJECTED THROUGH-CONTRACT COSTS SAGINAW: Derived 21 Months Log File

Unit Costs: 1. Columbia River System																			
ALL WORK ORDERS																			
	\$7,963,493	\$3,888,840	\$2,952,239	\$2,737,908	\$2,551,241														
JOB COSTS NOT SPECIFIC TO WORK ORDER																			
	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5														
Visits Per Trip	1	3	5.50	7	9														
Total Number of Trips	466	155	85	67	52														
Mob/Demo Costs Per Trip	\$5,500	\$5,500	\$5,500	\$5,500	\$5,500														
Total Mob/Demo Costs	\$2,563,000	\$854,333	\$468,000	\$366,143	\$284,778														
Transit Costs Per Mile	\$60	\$60	\$60	\$60	\$60														
Avg Miles Per Trip	134	149	166	183	201														
Total Transit Costs	\$3,757,743	\$1,391,757	\$843,489	\$729,015	\$623,713														
Geodetic Survey & Positionings	\$0	\$0	\$0	\$0	\$0														
Diving Services	\$0	\$0	\$0	\$0	\$0														
Buoys (Temporary)	\$0	\$0	\$0	\$0	\$0														
Buoys (Salvaged)	\$0	\$0	\$0	\$0	\$0														
Delivery of Materials to CG Base	\$0	\$0	\$0	\$0	\$0														
Pick Up of Materials to CG Base	\$0	\$0	\$0	\$0	\$0														
From DSS																			
Derived 1-Year Log																			
5.5 aids/trip																			
4613.76 knots * transit time																			
5309.52 transit miles																			
32 trips																			
165,922 miles per trip																			
JOB COSTS SPECIFIC TO WORK ORDER																			
ORDER	Single Pile	Three Pile	Wood DBN	Wood DBN	Wood DBN	Wood DBN	Wood LT	Single Pile	Three Pile	Passing Light	Wood LT	Wood LT	Wood LT	Platform, LT	Wood LT	Platform, LT	Wood LT	Wood LT	Steel, LT
Costs by Job Order: 3. Removals	\$2,200	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$2,200	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,500	\$4,800	\$3,500	\$3,500	\$3,500	\$3,500
4. Materials																			
5a, e.g. Installation	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$4,500	\$4,500	\$4,500	\$4,500	\$4,500	\$7,500	\$4,500	\$4,500	\$4,500	\$4,500
5n, p. Installation	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$4,200	\$4,200	\$4,200	\$4,200	\$4,200	\$7,200	\$3,200	\$3,200	\$3,200	\$3,200
6. Repairs	\$750	\$750	\$750	\$750	\$750	\$750	\$750	\$750	\$750	\$3,200	\$3,200	\$3,200	\$3,200	\$3,200	\$3,200	\$3,200	\$3,200	\$3,200	\$3,200
Work Order: Rebuilt Only	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Job Order(s): 5. Installation	\$95,000	\$0	\$0	\$0	\$0	\$0	\$0	\$177,500	\$117,000	\$117,000	\$117,000	\$117,000	\$117,000	\$58,500	\$15,000	\$0	\$4,500	\$4,500	\$4,500
Total Cost	\$95,000	\$0	\$0	\$0	\$0	\$0	\$0	\$177,500	\$117,000	\$117,000	\$117,000	\$117,000	\$117,000	\$58,500	\$15,000	\$0	\$4,500	\$4,500	\$4,500
Work Order: Rebuilt & Removal	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Job Order(s): 3. Removal	\$77,000	\$0	\$0	\$0	\$0	\$0	\$0	\$116,600	\$60,000	\$60,000	\$60,000	\$60,000	\$60,000	\$35,000	\$9,600	\$0	\$0	\$0	\$0
5. Installation	\$87,500	\$0	\$0	\$0	\$0	\$0	\$0	\$132,500	\$90,000	\$90,000	\$90,000	\$90,000	\$90,000	\$45,000	\$15,000	\$0	\$0	\$0	\$0
Total Cost	\$164,500	\$0	\$0	\$0	\$0	\$0	\$0	\$249,100	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000	\$80,000	\$24,600	\$0	\$0	\$0	\$0
Work Order: Repaired	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Job Order(s): 6. Repairs	\$10,500	\$0	\$0	\$0	\$0	\$0	\$0	\$20,250	\$32,000	\$32,000	\$32,000	\$32,000	\$32,000	\$16,000	\$3,200	\$0	\$0	\$0	\$0
Total Cost	\$10,500	\$0	\$0	\$0	\$0	\$0	\$0	\$20,250	\$32,000	\$32,000	\$32,000	\$32,000	\$32,000	\$16,000	\$3,200	\$0	\$0	\$0	\$0
Work Order: Reset	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Job Order(s): 6. Repairs	\$750	\$0	\$0	\$0	\$0	\$0	\$0	\$750	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Cost	\$750	\$0	\$0	\$0	\$0	\$0	\$0	\$750	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Work Order: Discontinued	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Job Order(s): 3. Removals	\$2,200	\$0	\$0	\$0	\$0	\$0	\$0	\$2,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Cost	\$2,200	\$0	\$0	\$0	\$0	\$0	\$0	\$2,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Work Order: Established	77	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Job Order(s): 5. Installation	\$231,000	\$0	\$0	\$0	\$0	\$0	\$0	\$108,000	\$54,600	\$54,600	\$54,600	\$54,600	\$54,600	\$22,400	\$3,200	\$0	\$0	\$0	\$0
Total Cost	\$231,000	\$0	\$0	\$0	\$0	\$0	\$0	\$108,000	\$54,600	\$54,600	\$54,600	\$54,600	\$54,600	\$22,400	\$3,200	\$0	\$0	\$0	\$0

I-S1, 3/21/94

PROJECTED THROUGH-CONTRACT COSTS
SAGINAW: Derived 21 Months Log File

Unit Costs: 2. SF/SP/S Bays					
ALL WORK ORDERS					
JOB COSTS NOT SPECIFIC TO					
WORK ORDER					
	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
Visits Per Trip	1	3	5.50	7	9
Total Number of Trips	466	155	85	67	52
Mob/Demo Costs Per Trip	\$4,075	\$4,075	\$4,075	\$4,075	\$4,075
Total Mob/Demo Costs	\$1,898,950	\$632,983	\$346,264	\$271,279	\$210,994
Transit Costs Per Mile	\$150	\$150	\$150	\$150	\$150
Avg Miles Per Trip	134	149	166	183	201
Total Transit Costs	\$9,394,357	\$3,479,392	\$2,108,722	\$1,822,538	\$1,559,283
Geodetic Survey & Positionings	\$0	\$0	\$0	\$0	\$0
Diving Services	\$0	\$0	\$0	\$0	\$0
Buoys (Temporary)	\$0	\$0	\$0	\$0	\$0
Buoys (Salvaged)	\$0	\$0	\$0	\$0	\$0
Delivery of Materials to CG Base	\$0	\$0	\$0	\$0	\$0
Pick Up of Materials to CG Base	\$0	\$0	\$0	\$0	\$0

JOB COSTS SPECIFIC TO WORK

	Single File	Three File	Wood DBN	Wood DBN	Wood DBN	Passing Light Only, DBN	Wood LT	Single File	Wood LT	Wood LT	Light	Platform, LT	Mud Sill, Steel, LT
ORDER													
Costs by Job Order: 3. Removals	\$2,250												
4. Materials													
5.1. Installation	\$3,225												
5.2. Installation	\$3,225												
6. Repairs	\$750												
<hr/>													
Work Order: Rebuilt Only	38		0	0	0	0	71	26	0	13	2	0	151
Job Order(s): 5. Installation	\$122,550	\$0	\$0	\$0	\$0	\$0	\$301,750	\$149,500	\$0	\$74,750	\$11,500	\$0	\$660,050
Total Cost	\$122,550	\$0	\$0	\$0	\$0	\$0	\$301,750	\$149,500	\$0	\$74,750	\$11,500	\$0	\$660,050
<hr/>													
Work Order: Rebuilt & Removal	35		0	0	0	0	53	20	0	10	2	0	120
Job Order (s): 3. Removal	\$78,750	\$0	\$0	\$0	\$0	\$0	\$119,250	\$51,000	\$0	\$25,500	\$5,100	\$0	\$279,600
5. Installation	\$112,875	\$0	\$0	\$0	\$0	\$0	\$225,250	\$115,000	\$0	\$57,500	\$11,500	\$0	\$522,125
Total Cost	\$191,625	\$0	\$0	\$0	\$0	\$0	\$344,500	\$166,000	\$0	\$83,000	\$16,600	\$0	\$801,725
<hr/>													
Work Order: Repaired	14		0	0	0	0	27	10	0	5	1	0	57
Job Order (s): 6. Repairs	\$10,500	\$0	\$0	\$0	\$0	\$0	\$20,250	\$24,000	\$0	\$12,000	\$2,400	\$0	\$69,150
Total Cost	\$10,500	\$0	\$0	\$0	\$0	\$0	\$20,250	\$24,000	\$0	\$12,000	\$2,400	\$0	\$69,150
<hr/>													
Work Order: Reset	1		0	0	0	0	1	0	0	0	0	0	2
Job Order (s): 6. Repairs	\$750	\$0	\$0	\$0	\$0	\$0	\$750	\$0	\$0	\$0	\$0	\$0	\$1,500
Total Cost	\$750	\$0	\$0	\$0	\$0	\$0	\$750	\$0	\$0	\$0	\$0	\$0	\$1,500
<hr/>													
Work Order: Discontinued	1		0	0	0	0	1	0	0	0	0	0	2
Job Order (s): 3. Removals	\$2,250	\$0	\$0	\$0	\$0	\$0	\$2,250	\$0	\$0	\$0	\$0	\$0	\$4,500
Total Cost	\$2,250	\$0	\$0	\$0	\$0	\$0	\$2,250	\$0	\$0	\$0	\$0	\$0	\$4,500
<hr/>													
Work Order: Established	77		0	0	0	0	36	13	0	7	1	0	134
Job Order (s): 5. Installation	\$248,325	\$0	\$0	\$0	\$0	\$0	\$116,100	\$55,250	\$0	\$16,800	\$2,400	\$0	\$438,875
Total Cost	\$248,325	\$0	\$0	\$0	\$0	\$0	\$116,100	\$55,250	\$0	\$16,800	\$2,400	\$0	\$438,875

1-S2, 3:21:94

APPENDIX J

SUMMARY OF THROUGH-CONTRACT COSTS FOR MALLET, HUDSON, AND SAGINAW

SUMMARY OF THROUGH-CONTRACT COSTS, MALLET

COST CATEGORY	Columbia River System	Mallet CG Ops *	Mallet 1 **	Mallet 2	Mallet 3	Mallet 4	Mallet 5
ITEM 1: MOBILIZATION/DEMOBILIZATION	\$22,000		\$533,500	\$177,833	\$133,376	\$76,214	\$59,278
ITEM 2: TRANSIT COSTS	\$3,000		\$914,542	\$338,719	\$282,266	\$177,424	\$151,796
ITEM 3: REMOVALS	\$64,100		\$197,200	\$197,200	\$197,200	\$197,200	\$197,200
ITEM 4: MATERIALS	\$83,488		\$0	\$0	\$0	\$0	\$0
ITEM 5: INSTALLATIONS	\$64,420		\$220,000	\$220,000	\$220,000	\$220,000	\$220,000
ITEM 6: REPAIRS	\$13,400		\$29,700	\$29,700	\$29,700	\$29,700	\$29,700
ITEM 7: DIVING SERVICES	\$3,200		\$0	\$0	\$0	\$0	\$0
ITEM 8: FIELD ENGINEERING	\$2,500		\$0	\$0	\$0	\$0	\$0
ITEM 9: BOUYS	\$1,700		\$0	\$0	\$0	\$0	\$0
ITEM 10: DELIVER REMAINING MATERIALS	\$1		\$0	\$0	\$0	\$0	\$0
ITEM 11: PICK UP MATERIALS REMAINING	\$1		\$0	\$0	\$0	\$0	\$0
GRAND TOTAL FOR ALL ITEMS	\$257,810	\$558,840	\$1,894,942	\$963,453	\$862,541	\$700,539	\$657,974
ADJUSTED TOTAL		\$433,660	\$1,515,954	\$770,762	\$690,033	\$560,431	\$526,379
Number of Work Orders		97	97	97	97	97	97
Number of Visits Per Trip			1	3	4	7	9
Mob, Dem, & Transits Costs Per Work Order	#DIV/0!	\$0	\$14,928	\$5,325	\$4,285	\$2,615	\$2,176
Other Costs Per Work Order	#DIV/0!	\$0	\$4,607	\$4,607	\$4,607	\$4,607	\$4,607
Total Contract Costs Per Work Order	#DIV/0!	\$4,471	\$15,628	\$7,946	\$7,114	\$5,778	\$5,427
COST CATEGORY							
ITEM 1: MOBILIZATION/DEMOBILIZATION	SF/SP/S Bays	Mallet CG Ops	Mallet 1	Mallet 2	Mallet 3	Mallet 4	Mallet 5
ITEM 2: TRANSIT COSTS	\$21,000		\$395,275	\$131,758	\$98,819	\$56,468	\$43,919
ITEM 3: REMOVALS	\$9,000		\$2,286,355	\$846,798	\$705,665	\$443,561	\$379,491
ITEM 4: MATERIALS	\$9,760		\$182,250	\$182,250	\$182,250	\$182,250	\$182,250
ITEM 5: INSTALLATIONS	\$29,160		\$0	\$0	\$0	\$0	\$0
ITEM 6: REPAIRS	\$17,475		\$323,125	\$323,125	\$323,125	\$323,125	\$323,125
ITEM 7: DIVING SERVICES	\$3,900		\$24,900	\$24,900	\$24,900	\$24,900	\$24,900
ITEM 8: FIELD ENGINEERING	\$4,000		\$0	\$0	\$0	\$0	\$0
ITEM 9: BOUYS	\$2,400		\$0	\$0	\$0	\$0	\$0
ITEM 10: DELIVER REMAINING MATERIALS	\$480		\$0	\$0	\$0	\$0	\$0
ITEM 11: PICK UP MATERIALS REMAINING	\$3,800		\$0	\$0	\$0	\$0	\$0
GRAND TOTAL FOR ALL ITEMS	\$149,975	\$558,840	\$3,211,905	\$1,508,831	\$1,334,759	\$1,030,304	\$953,685
ADJUSTED TOTAL		\$433,660	\$2,569,524	\$1,207,065	\$1,067,807	\$824,243	\$762,948
Number of Work Orders		97	97	97	97	97	97
Number of Visits per Trip			1	3	4	7	9
Mob, Dem, & Transits Costs Per Work Order	#DIV/0!	\$0	\$27,646	\$10,088	\$8,294	\$5,155	\$4,365
Other Costs Per Work Order	#DIV/0!	\$0	\$5,467	\$5,467	\$5,467	\$5,467	\$5,467
Total Contract Costs Per Work Order	#DIV/0!	\$4,471	\$26,490	\$12,444	\$11,008	\$8,497	\$7,865

* Reduced by 67% for non-construction work. ** Reduced by 12/15 months to reflect one year.

J-1, 3/22/94

SUMMARY OF THROUGH-CONTRACT COSTS, HUDSON

COST CATEGORY	Columbia River System	Hudson CG Ops *	Hudson 1**	Hudson 2	Hudson 3	Hudson 4	Hudson 5
ITEM 1: MOBILIZATION/DEMOLITION	\$22,000		\$1,919,500	\$639,833	\$330,948	\$274,214	\$213,278
ITEM 2: TRANSIT COSTS	\$3,000		\$3,711,894	\$1,374,776	\$790,101	\$727,395	\$622,326
ITEM 3: REMOVALS	\$64,100		\$489,000	\$489,000	\$489,000	\$489,000	\$489,000
ITEM 4: MATERIALS	\$83,488		\$0	\$0	\$0	\$0	\$0
ITEM 5: INSTALLATIONS	\$64,420		\$714,000	\$714,000	\$714,000	\$714,000	\$714,000
ITEM 6: REPAIRS	\$13,400		\$69,850	\$69,850	\$69,850	\$69,850	\$69,850
ITEM 7: DIVING SERVICES	\$3,200		\$0	\$0	\$0	\$0	\$0
ITEM 8: FIELD ENGINEERING	\$2,500		\$0	\$0	\$0	\$0	\$0
ITEM 9: BOUYS	\$1,700		\$0	\$0	\$0	\$0	\$0
ITEM 10: DELIVER REMAINING MATERIALS	\$1		\$0	\$0	\$0	\$0	\$0
ITEM 11: PICK UP MATERIALS REMAINING	\$1		\$0	\$0	\$0	\$0	\$0
GRAND TOTAL FOR ALL ITEMS	\$257,810	\$801,227	\$6,904,244	\$3,287,459	\$2,393,899	\$2,274,459	\$2,108,454
ADJUSTED TOTAL		\$688,254	\$3,602,214	\$1,715,196	\$1,248,991	\$1,186,674	\$1,100,063
Number of Work Orders		349	349	349	349	349	349
Number of Visits Per Trip			1	3	5.80	7	9
Mob, Dem, & Transits Costs Per Work Order	#DIV/0!	\$0	\$16,136	\$5,773	\$3,212	\$2,870	\$2,394
Other Costs Per Work Order	#DIV/0!	\$0	\$3,647	\$3,647	\$3,647	\$3,647	\$3,647
Total Contract Costs Per Work Order	#DIV/0!	\$1,972	\$10,322	\$4,915	\$3,579	\$3,400	\$3,152

COST CATEGORY	SF/SP/IS Bays	Hudson CG Ops *	Hudson 1**	Hudson 2	Hudson 3	Hudson 4	Hudson 5
ITEM 1: MOBILIZATION/DEMOLITION	\$21,000		\$1,422,175	\$474,058	\$245,203	\$203,168	\$158,019
ITEM 2: TRANSIT COSTS	\$9,000		\$9,279,736	\$3,436,939	\$1,975,252	\$1,818,486	\$1,555,816
ITEM 3: REMOVALS	\$9,760		\$495,450	\$495,450	\$495,450	\$495,450	\$495,450
ITEM 4: MATERIALS	\$29,160		\$0	\$0	\$0	\$0	\$0
ITEM 5: INSTALLATIONS	\$17,475		\$1,018,450	\$1,018,450	\$1,018,450	\$1,018,450	\$1,018,450
ITEM 6: REPAIRS	\$3,900		\$62,850	\$62,850	\$62,850	\$62,850	\$62,850
ITEM 7: DIVING SERVICES	\$4,000		\$0	\$0	\$0	\$0	\$0
ITEM 8: FIELD ENGINEERING	\$49,000		\$0	\$0	\$0	\$0	\$0
ITEM 9: BOUYS	\$2,400		\$0	\$0	\$0	\$0	\$0
ITEM 10: DELIVER REMAINING MATERIALS	\$480		\$0	\$0	\$0	\$0	\$0
ITEM 11: PICK UP MATERIALS REMAINING	\$3,800		\$0	\$0	\$0	\$0	\$0
GRAND TOTAL FOR ALL ITEMS	\$149,975	\$801,227	\$12,278,661	\$5,487,747	\$3,797,205	\$3,598,404	\$3,290,586
ADJUSTED TOTAL		\$688,254	\$6,406,258	\$2,863,173	\$1,981,150	\$1,877,428	\$1,716,827
Number of Work Orders		349	349	349	349	349	349
Number of Visits Per Trip			1	3	5.80	7	9
Mob, Dem, & Transits Costs Per Work Order	#DIV/0!	\$0	\$30,665	\$11,206	\$6,362	\$5,793	\$4,911
Other Costs Per Work Order	#DIV/0!	\$0	\$4,518	\$4,518	\$4,518	\$4,518	\$4,518
Total Contract Costs Per Work Order	#DIV/0!	\$1,972	\$18,356	\$8,204	\$5,677	\$5,379	\$4,919

* Reduced by 84% for non-construction work. ** Reduced by 12/23 months to reflect one year.

APPENDIX J

SUMMARY OF THROUGH-CONTRACT COSTS, SAGINAW

COST CATEGORY	Columbia River System	Saginaw CG Ops *	Saginaw 1 **	Saginaw 2	Saginaw 3	Saginaw 4	Saginaw 5
ITEM 1: MOBILIZATION/DEMOBILIZATION	\$22,000		\$2,563,000	\$854,333	\$466,000	\$366,143	\$284,778
ITEM 2: TRANSIT COSTS	\$3,000		\$3,757,743	\$1,391,757	\$843,489	\$729,015	\$623,713
ITEM 3: REMOVALS	\$64,100		\$302,600	\$302,600	\$302,600	\$302,600	\$302,600
ITEM 4: MATERIALS	\$83,488		\$0	\$0	\$0	\$0	\$0
ITEM 5: INSTALLATIONS	\$64,420		\$1,256,700	\$1,256,700	\$1,256,700	\$1,256,700	\$1,256,700
ITEM 6: REPAIRS	\$13,400		\$83,450	\$83,450	\$83,450	\$83,450	\$83,450
ITEM 7: DIVING SERVICES	\$3,200		\$0	\$0	\$0	\$0	\$0
ITEM 8: FIELD ENGINEERING	\$2,500		\$0	\$0	\$0	\$0	\$0
ITEM 9: BOUYS	\$1,700		\$0	\$0	\$0	\$0	\$0
ITEM 10: DELIVER REMAINING MATERIALS	\$1		\$0	\$0	\$0	\$0	\$0
ITEM 11: PICK UP MATERIALS REMAINING	\$1		\$0	\$0	\$0	\$0	\$0
GRAND TOTAL FOR ALL ITEMS	\$257,810	\$825,233	\$7,963,493	\$3,888,840	\$2,952,239	\$2,737,908	\$2,551,241
ADJUSTED TOTAL		\$708,875	\$4,550,567	\$2,222,194	\$1,686,994	\$1,564,519	\$1,457,852
Number of Work Orders		466	466	466	466	466	466
Number of Visits Per Trip			1	3	5.50	7	9
Mob, Dem, & Transits Costs Per Work Order	#DIV/OI	\$0	\$13,564	\$4,820	\$2,810	\$2,350	\$1,950
Other Costs Per Work Order	#DIV/OI	\$0	\$3,525	\$3,525	\$3,525	\$3,525	\$3,525
Total Contract Costs Per Work Order	#DIV/OI	\$1,521	\$9,765	\$4,769	\$3,620	\$3,357	\$3,128

COST CATEGORY	SE, SP, & Days	Saginaw CG Ops	Saginaw 1	Saginaw 2	Saginaw 3	Saginaw 4	Saginaw 5
ITEM 1: MOBILIZATION/DEMOBILIZATION	\$21,000		\$1,898,950	\$632,983	\$345,264	\$271,279	\$210,994
ITEM 2: TRANSIT COSTS	\$9,000		\$9,394,357	\$3,479,392	\$2,108,722	\$1,822,538	\$1,559,283
ITEM 3: REMOVALS	\$9,760		\$284,100	\$284,100	\$284,100	\$284,100	\$284,100
ITEM 4: MATERIALS	\$29,160		\$0	\$0	\$0	\$0	\$0
ITEM 5: INSTALLATIONS	\$17,475		\$1,621,050	\$1,621,050	\$1,621,050	\$1,621,050	\$1,621,050
ITEM 6: REPAIRS	\$3,900		\$70,650	\$70,650	\$70,650	\$70,650	\$70,650
ITEM 7: DIVING SERVICES	\$4,000		\$0	\$0	\$0	\$0	\$0
ITEM 8: FIELD ENGINEERING	\$49,000		\$0	\$0	\$0	\$0	\$0
ITEM 9: BOUYS	\$2,400		\$0	\$0	\$0	\$0	\$0
ITEM 10: DELIVER REMAINING MATERIALS	\$480		\$0	\$0	\$0	\$0	\$0
ITEM 11: PICK UP MATERIALS REMAINING	\$3,800		\$0	\$0	\$0	\$0	\$0
GRAND TOTAL FOR ALL ITEMS	\$149,975	\$825,233	\$13,269,107	\$6,088,175	\$4,429,786	\$4,069,617	\$3,746,077
ADJUSTED TOTAL		\$708,875	\$7,582,347	\$3,478,957	\$2,531,306	\$2,325,495	\$2,140,616
Number of Work Orders		466	466	466	466	466	466
Number of Visits Per Trip			1	3	5.50	7	9
Mob, Dem, & Transits Costs Per Work Order	#DIV/OI	\$0	\$24,235	\$8,825	\$5,266	\$4,493	\$3,799
Other Costs Per Work Order	#DIV/OI	\$0	\$4,240	\$4,240	\$4,240	\$4,240	\$4,240
Total Contract Costs Per Work Order	#DIV/OI	\$1,521	\$13,271	\$7,466	\$5,432	\$4,990	\$4,594

* Reduced by 84% for non-construction work. ** Reduced by 12/21 months to reflect one year.

J-3, 3/22/94

APPENDIX K

LIFE CYCLE COST ANALYSIS SPREADSHEETS FOR MALLET, HUDSON, AND SAGINAW

LIFE CYCLE COST, MALLET

APPENDIX K

WLIC 75	TOTAL	1993	1994	1995	1996	1997	2000	2001	2002	2003	2029	2030	2031	2032
No. Vessels in Fleet														
WLIC 75 Average Full Cost	—	1	1	1	1	1	1	1	1	1	1	1	1	1
WLIC 75 Avg % of Const	—	1	1	1	1	1	1	1	1	1	1	1	1	1
Mallet Annual Full Cost	—	1	1	1	1	1	1	1	1	1	1	1	1	1
Mallet Annual % of Const	—	1	1	1	1	1	1	1	1	1	1	1	1	1
Mallet Thru Contract	—	1	1	1	1	1	1	1	1	1	1	1	1	1
Total	—	4	4	4	4	4	4	4	4	4	4	4	4	4
O&M Costs ('93 \$K)														
WLIC 75 Average Full Cost	27,956	699	699	699	699	699	699	699	699	699	699	699	699	699
WLIC 75 Avg % of Const	21,694	542	542	542	542	542	542	542	542	542	542	542	542	542
Mallet Annual Full Cost	22,354	559	559	559	559	559	559	559	559	559	559	559	559	559
Mallet Annual % of Const	17,346	434	434	434	434	434	434	434	434	434	434	434	434	434
Mallet Thru Contract	27,601	690	690	690	690	690	690	690	690	690	690	690	690	690
Capital Costs ('93 \$K)														
WLIC 75 Average Full Cost	7,700	0	0	0	0	0	0	0	0	7,700	0	0	0	0
WLIC 75 Avg % of Const	7,700	0	0	0	0	0	0	0	0	7,700	0	0	0	0
Mallet Annual Full Cost	7,700	0	0	0	0	0	0	0	0	7,700	0	0	0	0
Mallet Annual % of Const	7,700	0	0	0	0	0	0	0	0	7,700	0	0	0	0
Mallet Thru Contract	0	0	0	0	0	0	0	0	0	0	0	0	0	0
O&M + Capital ('93 \$K)														
WLIC 75 Average Full Cost	35,656	699	699	699	699	699	699	699	699	8,399	699	699	699	699
WLIC 75 Avg % of Const	29,394	542	542	542	542	542	542	542	542	8,242	542	542	542	542
Mallet Annual Full Cost	30,054	559	559	559	559	559	559	559	559	8,259	559	559	559	559
Mallet Annual % of Const	25,046	434	434	434	434	434	434	434	434	8,134	434	434	434	434
Mallet Thru Contract	27,601	690	690	690	690	690	690	690	690	690	690	690	690	690
Discounted 1993 \$K														
Discount Rate	2%													
Discount Factor	—	1.000	0.980	0.961	0.942	0.924	0.871	0.853	0.837	0.820	0.490	0.481	####	0.462
WLIC 75 Average Full Cost	25,818	699	685	672	659	646	608	596	585	6,890	343	336	329	323
WLIC 75 Avg % of Const	21,449	542	532	521	511	501	472	463	454	6,762	266	261	256	251
Mallet Annual Full Cost	21,910	559	548	537	527	516	487	477	468	6,775	274	269	263	258
Mallet Annual % of Const	18,417	434	425	417	409	401	378	370	363	6,672	213	208	204	200
Mallet Thru Contract	19,254	690	677	663	650	637	601	589	577	566	338	332	325	319
Discount Rate *	4%													
Discount Factor	—	1.000	0.962	0.925	0.889	0.855	0.760	0.731	0.703	0.676	0.244	0.234	####	0.217
WLIC 75 Average Full Cost	19,588	699	672	646	621	597	531	511	491	5,674	170	164	157	151
WLIC 75 Avg % of Const	16,366	542	521	501	482	464	412	396	381	5,568	132	127	122	117
Mallet Annual Full Cost	16,705	559	537	517	497	478	425	408	393	5,579	136	131	126	121
Mallet Annual % of Const	14,129	434	417	401	386	371	330	317	305	5,495	106	102	98	94
Mallet Thru Contract	14,204	690	663	638	613	590	524	504	485	466	168	162	155	149
Discount Rate **	7%													
Discount Factor	—	1.000	0.935	0.873	0.816	0.763	0.623	0.582	0.544	0.508	0.088	0.082	####	0.071
WLIC 75 Average Full Cost	13,884	699	653	610	571	533	435	407	380	4,270	61	57	53	50
WLIC 75 Avg % of Const	11,651	542	507	474	443	414	338	316	295	4,190	47	44	41	39
Mallet Annual Full Cost	11,886	559	522	488	456	426	348	325	304	4,198	49	46	43	40
Mallet Annual % of Const	10,100	434	405	379	354	331	270	252	236	4,135	38	35	33	31
Mallet Thru Contract	9,843	690	645	603	563	526	430	402	375	351	60	56	53	49

COST PARAMETERS	WLIC 75 Average Full Cost	WLIC 75 Average % of Const	Mallet Annual Full Cost	Mallet Annual % of Const	Mallet thru Contract
Operating & maint. costs/vessel/year:	Construction Related Work = = = >			77.60%	
Personnel	403	313	399	309	0
Fuel	0	0	0	0	0
M & R	296	230	160	124	690
Total O&M/vessel	699	542	559	434	690
Capital costs/vessel:					
Lead vessel	—	—	—	—	0
Each following vessel	7,700	7,700	7,700	7,700	7,700

K-1, 4/18/94

* Suggested by OMB for Purchase & Lease Options. ** Suggested by OMB for Cost-Benefit Analysis.

LIFE CYCLE COST, HUDSON

APPENDIX K

WLIC 160	TOTAL	1993	1994	1995	1996	1997	2000	2001	2002	2003	2029	2030	2031	2032
No. Vessels in Fleet														
WLIC 160 Average Full	—	1	1	1	1	1	1	1	1	1	1	1	1	1
WLIC 160 Avg % of Co	—	1	1	1	1	1	1	1	1	1	1	1	1	1
Hudson Annual Full Cost	—	1	1	1	1	1	1	1	1	1	1	1	1	1
Hudson Annual % of Co	—	1	1	1	1	1	1	1	1	1	1	1	1	1
Hudson Thru Contract	—	1	1	1	1	1	1	1	1	1	1	1	1	1
Total	—	4	4	4	4	4	4	4	4	4	4	4	4	4
O&M Costs ('93 \$K)														
WLIC 160 Average Full	32,648	816	816	816	816	816	816	816	816	816	816	816	816	816
WLIC 160 Avg % of Co	28,045	701	701	701	701	701	701	701	701	701	701	701	701	701
Hudson Annual Full Cost	32,049	801	801	801	801	801	801	801	801	801	801	801	801	801
Hudson Annual % of Co	27,530	688	688	688	688	688	688	688	688	688	688	688	688	688
Hudson Thru Contract	49,960	1,249	1,249	1,249	1,249	1,249	1,249	1,249	1,249	1,249	1,249	1,249	1,249	1,249
Capital Costs ('93 \$K)														
WLIC 160 Average Full	7,700	0	0	0	0	0	0	0	0	7,700	0	0	0	0
WLIC 160 Avg % of Co	7,700	0	0	0	0	0	0	0	0	7,700	0	0	0	0
Hudson Annual Full Cost	7,700	0	0	0	0	0	0	0	0	7,700	0	0	0	0
Hudson Annual % of Co	7,700	0	0	0	0	0	0	0	0	7,700	0	0	0	0
Hudson Thru Contract	0	0	0	0	0	0	0	0	0	0	0	0	0	0
O&M + Capital ('93 \$K)														
WLIC 160 Average Full	40,348	816	816	816	816	816	816	816	816	8,516	816	816	816	816
WLIC 160 Avg % of Co	35,745	701	701	701	701	701	701	701	701	8,401	701	701	701	701
Hudson Annual Full Cost	39,749	801	801	801	801	801	801	801	801	8,501	801	801	801	801
Hudson Annual % of Co	35,230	688	688	688	688	688	688	688	688	8,388	688	688	688	688
Hudson Thru Contract	49,960	1,249	1,249	1,249	1,249	1,249	1,249	1,249	1,249	1,249	1,249	1,249	1,249	1,249
Discounted 1993 \$K														
Discount Rate	2%													
Discount Factor	—	1.000	0.980	0.961	0.942	0.924	0.871	0.853	0.837	0.820	0.490	#####	#####	#####
WLIC 160 Average Full	29,091	816	800	785	769	754	711	697	683	6,986	400	392	385	377
WLIC 160 Avg % of Co	25,880	701	687	674	661	648	610	598	587	6,892	344	337	330	324
Hudson Annual Full Cost	28,673	801	786	770	755	740	698	684	670	6,974	393	385	378	370
Hudson Annual % of Co	25,521	638	675	662	649	636	599	587	576	6,881	337	331	324	318
Hudson Thru Contract	34,850	1,249	1,225	1,200	1,177	1,154	1,087	1,066	1,045	1,025	612	600	589	577
Discount Rate *	4%													
Discount Factor	—	1.000	0.962	0.925	0.889	0.855	0.760	0.731	0.703	0.676	0.244	#####	#####	#####
WLIC 160 Average Full	22,003	816	785	755	726	698	620	596	573	5,753	199	191	184	177
WLIC 160 Avg % of Co	19,634	701	674	648	623	599	533	512	493	5,675	171	164	158	152
Hudson Annual Full Cost	21,695	801	770	741	712	685	609	585	563	5,743	195	188	181	174
Hudson Annual % of Co	19,369	688	662	636	612	588	523	503	484	5,667	168	161	155	149
Hudson Thru Contract	25,710	1,249	1,201	1,155	1,110	1,068	949	913	878	844	304	293	281	271
Discount Rate **	7%													
Discount Factor	—	1.000	0.935	0.873	0.816	0.763	0.623	0.582	0.544	0.508	0.088	#####	#####	#####
WLIC 160 Average Full	15,557	816	763	713	666	623	508	475	444	4,329	71	67	62	58
WLIC 160 Avg % of Co	13,916	701	655	612	572	535	437	408	381	4,271	61	57	54	50
Hudson Annual Full Cost	15,344	801	749	700	654	611	499	466	436	4,322	70	66	61	57
Hudson Annual % of Co	13,732	688	643	601	562	525	429	401	374	4,264	60	56	53	49
Hudson Thru Contract	17,817	1,249	1,167	1,091	1,020	953	778	727	679	635	109	102	95	89

COST PARAMETERS	WLIC 160 Average Full Cost	WLIC 160 Average % of Crst	Hudson Annual Full Cost	Hudson Annual % of Crst	Hudson thru Contract
Operating & maint. costs/vessel/year:	Construction Related Work = = = = >		85.90%		
Personnel	438	376	438	376	0
Fuel	0	0	0	0	0
M & R	378	321	363	312	1249
Total O&M/vessel	816	701	801	688	1249
Capital costs/vessel:					
Lead vessel	—	—	—	—	0
Each following vessel	7,700	7,700	7,700	7,700	0

* Suggested by OMB for Purchase & Lease Options. ** Suggested by OMB for Cost-Benefit Analysis.

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LIFE CYCLE COST, SAGINAW

APPENDIX K

WLIC 160	TOTAL	1993	1994	1995	1996	1997	2000	2001	2002	2003	2029	2030	2031	2032
No. Vessels in Fleet														
WLIC 160 Average Full Cost	—	1	1	1	1	1	1	1	1	1	1	1	1	1
WLIC 160 Avg % of Const	—	1	1	1	1	1	1	1	1	1	1	1	1	1
Saginaw Annual Full Cost	—	1	1	1	1	1	1	1	1	1	1	1	1	1
Saginaw Annual % of Const	—	1	1	1	1	1	1	1	1	1	1	1	1	1
Saginaw Thru Contract	—	1	1	1	1	1	1	1	1	1	1	1	1	1
Total	—	4	4	4	4	4	4	4	4	4	4	4	4	4
O&M Costs ('93 \$K)														
WLIC 160 Average Full Cost	32,648	816	816	816	816	816	816	816	816	816	816	816	816	816
WLIC 160 Avg % of Const	28,045	701	701	701	701	701	701	701	701	701	701	701	701	701
Saginaw Annual Full Cost	33,009	825	825	825	825	825	825	825	825	825	825	825	825	825
Saginaw Annual % of Const	28,355	709	709	709	709	709	709	709	709	709	709	709	709	709
Saginaw Thru Contract	67,480	1,687	1,687	1,687	1,687	1,687	1,687	1,687	1,687	1,687	1,687	1,687	1,687	1,687
Capital Costs ('93 \$K)														
WLIC 160 Average Full Cost	7,700	0	0	0	0	0	0	0	0	7,700	0	0	0	0
WLIC 160 Avg % of Const	7,700	0	0	0	0	0	0	0	0	7,700	0	0	0	0
Saginaw Annual Full Cost	7,700	0	0	0	0	0	0	0	0	7,700	0	0	0	0
Saginaw Annual % of Const	7,700	0	0	0	0	0	0	0	0	7,700	0	0	0	0
Saginaw Thru Contract	0	0	0	0	0	0	0	0	0	0	0	0	0	0
O&M + Capital ('93 \$K)														
WLIC 160 Average Full Cost	40,348	816	816	816	816	816	816	816	816	8,516	816	816	816	816
WLIC 160 Avg % of Const	35,745	701	701	701	701	701	701	701	701	8,401	701	701	701	701
Saginaw Annual Full Cost	40,709	825	825	825	825	825	825	825	825	8,525	825	825	825	825
Saginaw Annual % of Const	36,055	709	709	709	709	709	709	709	709	8,409	709	709	709	709
Saginaw Thru Contract	67,480	1,687	1,687	1,687	1,687	1,687	1,687	1,687	1,687	1,687	1,687	1,687	1,687	1,687
Discounted 1993 \$K														
Discount Rate	2%													
Discount Factor	—	1.000	0.980	0.961	0.942	0.924	0.871	0.853	0.837	0.820	#####	#####	#####	#####
WLIC 160 Average Full Cost	29,091	816	800	785	769	754	711	697	683	6,986	400	392	385	377
WLIC 160 Avg % of Const	25,880	701	687	674	661	648	610	598	587	6,892	344	337	330	324
Saginaw Annual Full Cost	29,343	825	809	793	778	762	718	704	691	6,994	405	397	389	381
Saginaw Annual % of Const	26,096	709	695	681	668	655	617	605	593	6,898	348	341	334	327
Saginaw Thru Contract	47,071	1,687	1,654	1,621	1,590	1,559	1,469	1,440	1,412	1,384	827	811	795	779
Discount Rate *	4%													
Discount Factor	—	1.000	0.962	0.925	0.889	0.855	0.760	0.731	0.703	0.676	#####	#####	#####	#####
WLIC 160 Average Full Cost	22,003	816	785	755	726	698	620	596	573	5,753	199	191	184	177
WLIC 160 Avg % of Const	19,634	701	674	648	623	599	533	512	493	5,675	171	164	158	152
Saginaw Annual Full Cost	22,189	825	793	763	734	705	627	603	580	5,759	201	193	186	179
Saginaw Annual % of Const	19,794	709	682	655	630	606	539	518	498	5,681	173	166	160	154
Saginaw Thru Contract	34,726	1,687	1,622	1,560	1,500	1,442	1,282	1,233	1,185	1,140	411	395	380	365
Discount Rate **	7%													
Discount Factor	—	1.000	0.935	0.873	0.816	0.763	0.623	0.582	0.544	0.508	#####	#####	#####	#####
WLIC 160 Average Full Cost	15,557	816	763	713	666	623	508	475	444	4,329	71	67	62	58
WLIC 160 Avg % of Const	13,916	701	655	612	572	535	437	408	381	4,271	61	57	54	50
Saginaw Annual Full Cost	15,686	825	771	721	674	630	514	480	449	4,334	72	68	63	59
Saginaw Annual % of Const	14,026	709	663	619	579	541	441	413	386	4,275	62	58	54	51
Saginaw Thru Contract	24,065	1,687	1,577	1,473	1,377	1,287	1,051	982	918	858	148	138	129	121

COST PARAMETERS	160 Average Full Cost	WLIC 160 Average % of Const	Saginaw Annual Full Cost	Saginaw Annual % of Const	Saginaw thru Contract
Operating & maint. costs/vessel/year:	Instruction Related Work -----> 85.90%				
Personnel	438	376	438	376	0
Fuel	0	0	0	0	0
M & R	378	325	387	333	1,687
Total O&M/vessel	816	701	825	709	1,687
Capital costs/vessel:					
Lead vessel	—	—	—	—	0
Each following vessel	7,700	7,700	7,700	7,700	0

* Suggested by OMB for Purchase & Lease Options. ** Suggested by OMB for Cost-Benefit Analysis.

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APPENDIX L

PROJECT TRAVEL

**September 21-22, 1993, U.S.C.G. WLIC Experts Conference
National ATON Training Center, Yorktown, Virginia**

Attendees:

LT Tom Flynn, Fifth District (oan)
CWO Lenny Cruz, Commanding Officer, USCGC SLEDGE
LTJG Bill Wise, Seventh District (oan)
CWO Mark Allen, Commanding Officer, USCGC HUDSON
BMC Chuck Unkrich, Eighth District (oan)
BMCM Jerry Alverson, Officer-in-Charge, USCGC CLAMP

LCDR Mitch West, G-NSR
Kip Brown, Volpe National Transportation Systems Center
Mark Bucciarelli, Volpe National Transportation Systems Center
Flavio Leo, Volpe National Transportation Systems Center

**February 22, 1994, Briefing of Preliminary Results to Fifth Coast Guard District
Portsmouth, VA**

Attendees:

CAPT John Vaughn, Chief, Fifth District (oan)
LCDR Bill Southwood, Deputy Chief, Fifth District (oan)
LT Tom Flynn, Fifth District (oan)
Mr. John Walters, Fifth District (oan)

LCDR Mitch West, G-NSR
Kip Brown, Volpe National Transportation Systems Center
Flavio Leo, Volpe National Transportation Systems Center

**February 23, 1994, Briefing of Preliminary Results to Eighth Coast Guard District
New Orleans, LA**

Attendees:

CAPT James Force, Chief, Eighth District (oan)
CDR John Gentile, Deputy Chief, Eighth District (oan)
LT Steve Hadley, Eighth District (oan)
BMC Chuck Unkrich, Eighth District (oan)

LCDR Mitch West, G-NSR
Kip Brown, Volpe National Transportation Systems Center
Mark Bucciarelli, Volpe National Transportation Systems Center
Flavio Leo, Volpe National Transportation Systems Center

**February 24, 1994, Briefing of Preliminary Results to Seventh Coast Guard District
Miami, FL**

Attendees:

CAPT Brian Hadler, Chief, Seventh District (oan)
LCDR Howard Van Houten, Deputy Chief, Seventh District (oan)
LCDR Gene Gray, Seventh District (oan)
LTJG Bill Wise, Seventh District (oan)
BMCS Bob Hunsacker, Seventh District (oan)

LCDR Mitch West, G-NSR
Kip Brown, Volpe National Transportation Systems Center
Mark Bucciarelli, Volpe National Transportation Systems Center